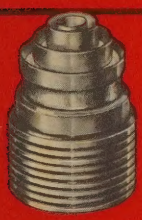
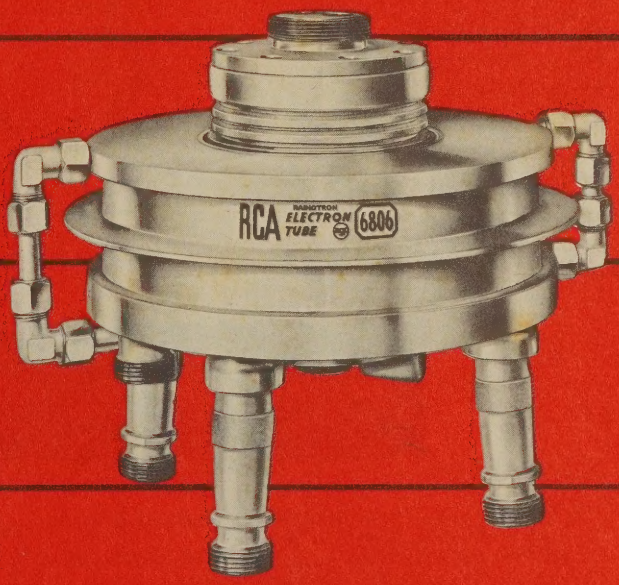
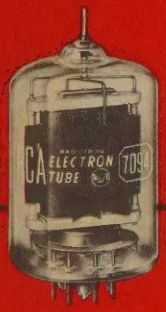
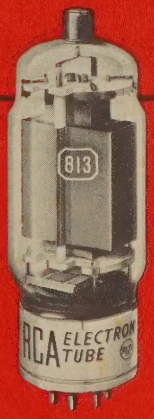
PRICE 30 CENTS

RCA POWER AND GAS TUBES









- *Vacuum Power Tubes*
- *Rectifier Tubes*
- *Thyratrons*
- *Ignitrons*

RADIO CORPORATION OF AMERICA
ELECTRON TUBE DIVISION HARRISON, N. J.

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FORM NO. PG-101D

Power and Gas Tubes

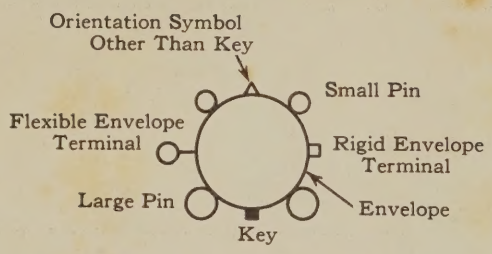
In this revised edition are data for a number of new beam power tubes including several small, compact radiator types utilizing ceramic-metal seals for vhf and uhf applications, and a super-power shielded-grid beam triode having a useful cw power output of 500 kw.

This catalog provides concise technical information on RCA Power Tubes, Rectifier Tubes, Thyratrons, and Ignitrons. Descriptions, basing diagrams, maximum plate ratings, and typical operating conditions are shown for more than 175 types. More complete information on the types covered by this catalog is available on request to Commercial Engineering, RCA, Harrison, N. J. When requesting such information, please specify the type in which you are interested.

KEY TO BASE AND ENVELOPE CONNECTION DIAGRAMS

Diagrams show terminals viewed from the base or filament end of the type

BC = Base Sleeve
BS = Base Shell
F = Filament
F_M = Filament Mid-Tap
F_R = Filament Return
G = Grid
H = Heater
H_M = Heater Mid-Tap
I = Ignitor
IC = Internal Connection — Do Not Use
IS = Internal Shield
K = Cathode



K_R = RF Cathode
KS = Cathode Shield
NC = No Connection
P = Plate (Anode)

P_H = Holding Anode
S = Shell
• = Gas Type

SUBSCRIPTS

B = Beam Unit
D = Diode Unit
P = Pentode Unit
T = Triode Unit
TR = Tetrode Unit
W = Water Connection

EXPLANATION OF CLASS-OF-SERVICE ABBREVIATIONS

C-P = Class C Plate-Modulated Telephone Service.
C-T = Class C Telegraph Service.
C-T-F = Class C Telegraph or FM Telephone Service.
A_1 = Class A_1 AF Modulator Service.
AB_1 = Class AB_1 Push-Pull AF Modulator Service.
AB_2 = Class AB_2 Push-Pull AF Modulator Service.
B = Class B Push-Pull AF Modulator Service.
B-T = Class B Television Service.
C-G-T = Class C Grid-Modulated Television Service.
C-M = Class C Frequency-Multiplier Service.

NOTE: In Classes of Service A_1, B-T, C-G-T, C-P, C-T, C-T-F, and C-M, the values shown under Maximum Plate Ratings and Typical Operating Conditions are for one tube. In Classes of Service AB_1, AB_2, and B, the values shown under Maximum Ratings are for one tube; and those under Typical Operating Conditions are for two tubes, except for twin-unit types.

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In addition to the electron devices covered in this booklet, the ELECTRON TUBE DIVISION of the RADIO CORPORATION OF AMERICA offers the following:

RECEIVING TUBES FOR ENTERTAINMENT USE
Rectifiers, Diode Detectors, Converters, Voltage and Power Amplifiers, Oscillators, Mixers, and TV Picture Tubes.

PHOTOSENSITIVE DEVICES AND CATHODE-RAY TUBES
Phototubes, Photocells, Camera Tubes, Image-converter Tubes, Storage Tubes, Cathode-Ray Tubes, Monoscopes.

MICROWAVE TUBES
Magnetrons and Traveling-Wave Tubes.

TEST AND MEASURING EQUIPMENT
For AM, FM, and TV Servicing as well as for Laboratories and Industrial Use.

SEMICONDUCTOR DEVICES
Transistors and Silicon Rectifiers.

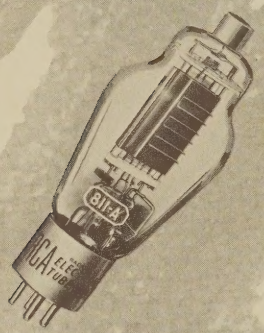
RECEIVING-TYPE INDUSTRIAL TUBES
"Special Red" Tubes, Premium Tubes, "Pencil-Type" Tubes, Computer Tubes, Glow-Discharge Tubes, Small Thyratrons, Vacuum-Gauge Tubes, and Other Special Types.

DRY BATTERIES
For Electron-Tube and Transistor Radios, Flashlights, and Industrial Applications.

AUDIO DEVICES AND TV ACCESSORIES
Magnetic Recording Sound Tape and Accessories, TV-Set Couplers, and Lightning Arrestors.

RCA VICTOR SERVICE PARTS
For RCA Phonographs, Radios, and TV Receivers.

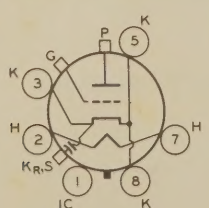
For technical information on any of these items, see your RCA Tube Distributor, or write to Commercial Engineering, RCA, Harrison, New Jersey.



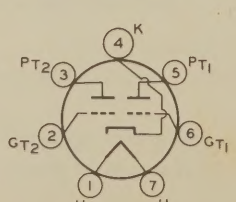
Type	Description
TRIODES (Air-Cooled)	
2C40	Lighthouse Triode. For use as an rf amplifier at frequencies up to 1200 Mc and cw oscillator at frequencies up to 3370 Mc. Octal 6-pin base.
2C43	Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a cw oscillator at frequencies up to 1500 Mc.
3C33	Heater-cathode type containing two high-perveance units. For use in industrial control and voltage-regulator service. Septar 7-pin base.
801-A	Not recommended for new equipment design.
805	High-mu zero-bias class B modulator with thoriated-tungsten filament. Features high power output with low plate voltage and low distortion. Jumbo 4-pin base. Medium cap.
808	High-mu type for high-frequency applications. Thoriated-tungsten filament. Small 4-pin, bayonet base. Medium end cap, small side cap.
809	High-perveance high-mu type with thoriated-tungsten filament. Small 4-pin micanol bayonet base. Medium cap.
810	High-perveance type with a graphite plate and a thoriated-tungsten filament. Jumbo 4-pin base. Skirted medium end cap, medium side cap.
811-A	High-mu type. Small 4-pin micanol bayonet base. Medium cap.
812-A	Medium-mu type. Small, 4-pin micanol bayonet base.
826	Not recommended for new equipment design. For forced-air cooled operation, see page 8.
830-B	Not recommended for new equipment design.
833-A	High-perveance type with thoriated-tungsten filament. Special post terminals. For forced-air cooled ratings, see page 8.
834	Medium-mu type with thoriated-tungsten filament. Small 4-pin, bayonet base. Wire top terminals.
838	Not recommended for new equipment design.
845	Modulator type. Jumbo 4-pin base.

Note 1: P = Plate, post and end-disc terminal; G = Grid, center disc terminal; S = Shell, cathode rf terminal.

For Key to Base and Envelope Connection Diagrams, see page 2.



See Note 1
2C40 2C43



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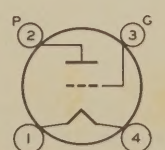
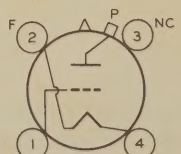


801-A



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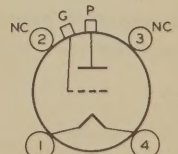


808

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings† Absolute Values			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Approx. Power Output Watts	
TRIODES (Air-Cooled)																	
6.3	0.75	$2\frac{9}{16}$	$1\frac{5}{16}$	36	C·T	—	500	—	6.5	250	−5	—	0.02	—	—	0.075	**2C40**
						Oscillator at 3370 Mc →											
6.3	0.9	$2\frac{11}{16}$	$1\frac{5}{16}$	48	C·T	—	500	—	12	470	Grid Res., 1000 ohms		0.038	—	—	9	**2C43**
						Osc. at 350 Mc (2 tubes) →											
12.6	1.125	$3\frac{11}{16}$	$2\frac{3}{8}$	11 per unit	*Max. Values per Unit:* Peak Plate Voltage = ±2000 Volts; Peak Cathode Current = 500 Ma; Av. Grid Current = 7.5 Max. Ma; DC Grid Voltage = −200 Volts; Av. Plate Current = 120 Max. Ma; Dissipation = 15 Watts												**3C33**
7.5	1.25	$5\frac{3}{8}$	$2\frac{1}{16}$	8	C·T	60	600	42	20	600	−150	—	0.065	—	4	25	**801-A**
10	3.25	$8\frac{1}{2}$	$2\frac{5}{16}$	Variable	B	—	1500	315	125	1250	0	235	0.4[z]	6700	6	300	**805**
					C·P	30	1250	220	85	1250	−160	—	0.16	—	16	140	
					C·T	30	1500	315	125	1500	−105	—	0.2	—	8.5	215	
7.5	4	$6\frac{1}{16}$	$2\frac{13}{16}$	47	•B	—	2000	225	75	2000	−36	270	0.22[z]	21400	8.8	300	**808**
					•C·P	30	1600	200	50	1600	−170	—	0.125	—	10	150	
					•C·T	30	2000	300	75	2000	−150	—	0.15	—	9	225	
6.3	2.5	$6\frac{9}{16}$	$2\frac{7}{16}$	50	•B	—	1000	100	30	1000	−9	155	0.2[z]	11600	2.7	145	**809**
					•C·P	60	750	75	25	750	−60	—	0.1	—	4.3	55	
					•C·T	60	1000	100	30	1000	−75	—	0.1	—	3.8	75	
10	4.5	$8\frac{3}{4}$	$2\frac{1}{4}$[a]	36	•B	—	2750	510	175	2250	−60	380	0.45[z]	11600	13	725	**810**
					•C·P	30	2000	500	125	2000	−350	—	0.25	—	35	380	
					•C·T	30	2500	750	175	2500	−180	—	0.3	—	19	575	
6.3	4	$6\frac{15}{32}$	$2\frac{7}{16}$	160	•B	—	1500	235	65	1250	0	175	0.350[z]	9200	6	310	**811-A**
					•C·P	30	1250	175	45	1250	−120	—	0.14	—	10	135	
					•C·T	30	1500	260	65	1500	−70	—	0.173	—	7.1	200	
6.3	4	$6\frac{15}{32}$	$2\frac{7}{16}$	29	•B	—	1500	235	65	1500	−48	270	0.31[z]	13200	5	340	**812-A**
					•C·P	30	1250	175	45	1250	−115	—	0.14	—	7.6	130	
					•C·T	30	1500	260	65	1500	−120	—	0.173	—	6.5	190	
7.5	4	$3\frac{11}{16}$	$2\frac{3}{8}$	31	•C·T	250	1000	130	55	1000	−70	—	0.13	—	5.8	90	**826**
10	2	$6\frac{11}{16}$	$2\frac{1}{16}$	25	C·T	15	1000	150	60	1000	−110	—	0.14	—	7	90	**830-B**
10	10	$8\frac{13}{16}$	$4\frac{19}{32}$	35	•B	—	3300	1300	350	3300	−80	440	0.78[z]	10500	30	1900	**833-A**
					•C·P	30	3000	1000	250	3000	−240	—	0.335	—	26	800	
					•C·T	30	3300	1500	350	3000	−155	—	0.5	—	25	1150	
7.5	3.1	$6\frac{7}{8}$	$2\frac{11}{16}$	10.5	C·P	100	1000	100	35	1000	−310	—	0.09	—	6.5	58	**834**
					C·T	100	1250	125	50	1250	−225	—	0.09	—	4.5	75	
10	3.25	$7\frac{7}{8}$	$2\frac{5}{16}$	Variable	C·T	30	1250	220	100	1250	−90	—	0.15	—	6	130	**838**
10	3.25	$7\frac{7}{8}$	$2\frac{5}{16}$	5.3	AB_1	—	1250	150	100	1250	−225	440	0.24[z]	6600	—	115	**845**

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

*For explanatory notes on Class of Service, see page 2.

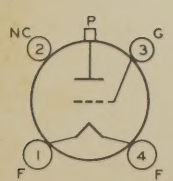
†Unless otherwise specified, all values shown are for Continuous Commercial Service.

•Intermittent Commercial and Amateur Service.

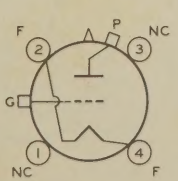
[a] Maximum radius.

[z] Maximum-signal value.

For Key to Base and Envelope Connection Diagrams, see page 2.



809 811-A 812-A 830-B



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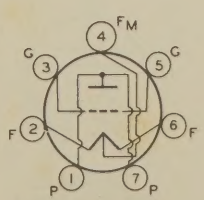

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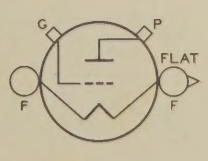

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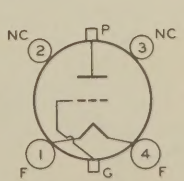

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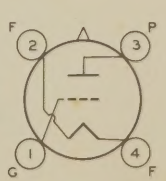

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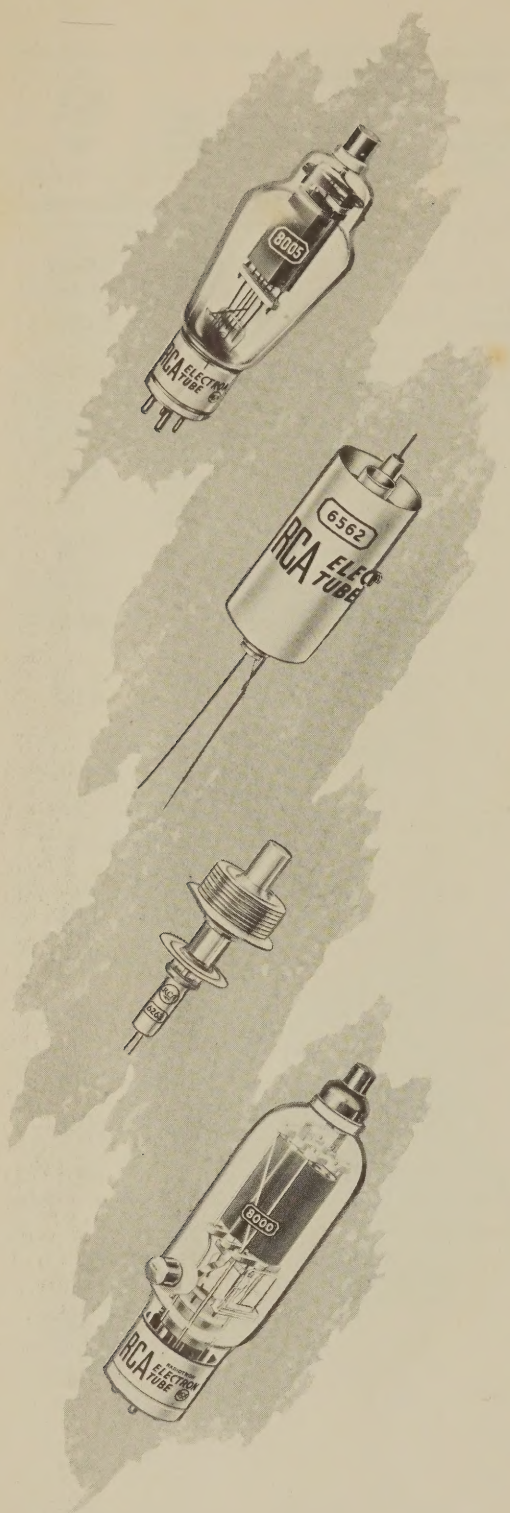


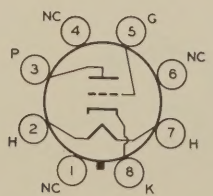
Type	Description
TRIODES (Air-Cooled)—Cont'd	
1626	Not recommended for new equipment design.
5556	Thoriated-tungsten filament type. Small 4-pin, bayonet base.
5675	Medium-Mu Triode. "Pencil" type. For use in cathode-drive service as a class C rf power amplifier and oscillator. Useful up to 3000 Mc.
5876	General-Purpose, High-Mu Triode. "Pencil" type. For use in cathode-drive circuits as an rf amplifier, if amplifier, or mixer tube in receivers operating at frequencies up to 1000 Mc; as a frequency multiplier up to about 1500 Mc, and as an oscillator up to 1700 Mc.
5876-A	High-Mu Triode. Like the 5876 but intended for military and critical industrial applications.
5893	Medium-Mu Triode. "Pencil" type. For cathode-drive service as a plate-pulsed oscillator up to 3300 Mc. May also be used as an rf power amplifier, cw oscillator, or frequency doubler up to 1000 Mc.
6026	High-efficiency Oscillator Triode. Subminiature type. Intended for radiosonde and similar applications at 400 Mc.
6263	Medium-Mu Triode. "Pencil" type with external plate radiator. For use in cathode-drive service as an rf power amplifier and oscillator at frequencies up to 1700 Mc. Can be used in mobile equipment, and in aircraft transmitters at altitudes up to 60,000 feet without pressurized chambers.
6264	Medium-Mu Triode. "Pencil" type. Like the 6263 but has a mu of 40. Especially useful as a frequency multiplier.
6562	Fixed-Tuned Oscillator Triode. "Pencil" type with two resonators integral with tube. Intended for radiosonde applications at 1680 Mc.
8000	High-perveance type with graphite anode and thoriated-tungsten filament. Useful in communications and industrial applications. Jumbo 4-pin base. Skirted medium end cap, medium side cap.
8005	High-perveance type. Useful as self-rectifying oscillator in industrial applications. Medium-metal-shell, small 4-pin, bayonet base. Ceramic-insulated medium cap.
8012-A	Not recommended for new equipment design.
8025-A	Not recommended for new equipment design. For forced-air cooled operation, see page 10.

Note 2: The heater leads for the "Pencil" tubes with the exception of type 6562 fit the Cinch Socket No. 54A1635, or equivalent. Connections to the plate, grid, and cathode terminals require flexible spring contacts. The cathode of the 6562 is externally connected to one of the heater leads.

Note 3: G terminals nearer filament leads; P terminals nearer bulb tip.

Note 4: G caps nearer base; P caps nearer bulb tip.

For Key to Base and Envelope Connection Diagrams, see page 2.



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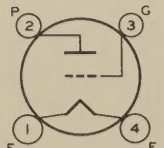

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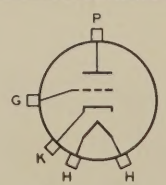
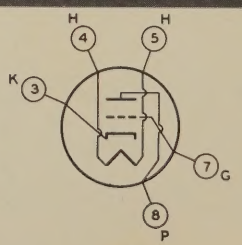


See Note 2
5675 5876 5876-A
5893 6263 6264



6026

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings† Absolute Values			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Approx. Power Output Watts	
TRIODES (Air-Cooled)—Cont'd																	
12.6	0.25	4 1/8	1 9/16	5	C·T	30	250	6.25	5	250	−70	—	0.025	—	0.5	4	**1626**
4.5	1.1	4 1/2	1 5/8	8.5	A_1	—	350	—	7.5	350	−30	30	0.009	18000	—	0.6	**5556**
					C·P	6	350	14	7	300	−100	—	0.03	—	0.3	4	
					C·T	6	350	14	10	350	−80	—	0.035	—	0.25	6	
6.3	0.135	2.252	0.816 [aa]	20	C·T	—	300	9	9	120	−8	—	0.025	—	—	0.475	**5675**
						Oscillator at 1700 Mc →											
6.3	0.135	2.252	0.816 [aa]	56	C·T	—	360	9	6.25	250	−2	—	0.023	—	—	0.75	**5876**
						Oscillator at 1700 Mc →											
					C·M	—	330	7.5	6.25	300	−70	—	0.017	—	2	2	
						Doubler to 960 Mc →											
Like the 5876 but also undergoes the following tests during manufacture to minimize early failures and to insure dependable performance: glass fracture, vibrational acceleration, low-frequency vibration, heater-cycling, stability, and survival rate.																	**5876-A**
6	0.28	2.297	0.816 [aa]	27	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 5 μsec in Any 5000 μsec Interval; Peak Positive-Pulse Plate Volts, 1750; Plate Dissipation, 6 watts; Peak Plate Amperes, 3; Pulse Duration, 1.5 μsec												**5893**
5.2 to 6.6	0.2 at 6.3 volts	1 1/2 [c]	0.4	24	C·T	—	150	3.3	3.0	135	Grid Res., 1300 ohms		0.02	—	—	1.25 [p]	**6026**
						Oscillator at 400 Mc →											
6	0.28	2.63	1.01 [bb]	27	• C·P	500	330	15	9	320	−52	—	0.035	—	2.4 [m]	8 [p]	**6263**
					• C·T	500	400	22	13								
						Oscillator at 500 Mc →				350	−35	—	0.04	—	—	7 [p]	
						Rf Power Amp. at 500 Mc →				350	−58	—	0.04	—	3 [m]	10 [p]	
6	0.28	2.63	1.01 [bb]	40	• C·M	500	350	15.8	9.5	350	−122	—	0.037	—	4.5 [m]	3.4 [p]	**6264**
						Tripler to 510 Mc →											
5.2 to 6.6	0.16 at 6.0 volts	3.256 [c]	0.865 [a]	29	C·T	Frequency (approx.), 1680 Mc. Frequency Adjustment Range, ±12 Mc. Max. Frequency Drift, +4 to −1 Mc. Plate-Voltage Range, 117 to 95 Volts. Ambient Temp. Range +22 to −40°C.											**6562**
10	4.5	8 3/4	2 1/4 [a]	16.5	• B	—	2750	510	175	2250	−130	560	0.45 [z]	12000	7.9	725	**8000**
					• C·P	30	2000	500	125	2000	−370	—	0.25	—	20	380	
					• C·T	30	2500	750	175	2500	−240	—	0.3	—	18	575	
10	3.25	6 11/16	2 7/16	20	• B	—	1500	250	85	1500	−67.5	330	0.33 [z]	9800	5.5	330	**8005**
					• C·P	60	1250	240	75	1250	−195	—	0.19	—	9	170	
					• C·T	60	1500	300	85	1500	−130	—	0.2	—	7.5	220	
6.3	1.92	3 15/16 [c]	1 3/16 [a]	18	C·T	500	1000	50	40	1000	−90	—	0.05	—	1.6	35 [rr]	**8012-A**
6.3	1.92	4 15/16	1 5/64 [a]	18	• C·T	500	1000	50	30	1000	−90	—	0.05	—	1.6	35 [rr]	**8025-A**

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

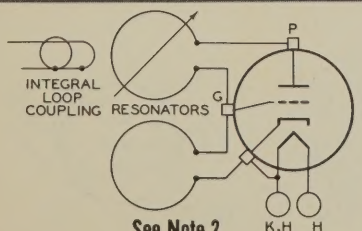
* For explanatory notes on Class of Service, see page 2.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

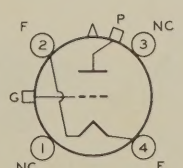
• Intermittent Commercial and Amateur Service.

[a] Maximum radius.
[c] Excluding flexible leads.
[m] Driver power output.
[p] Useful power output.
[z] Maximum-signal value.
[aa] Including grid flange.
[bb] Including radiator fin.
[rr] At 100 Kc under indicated conditions.

For Key to Base and Envelope Connection Diagrams, see page 2.



See Note 2
6562



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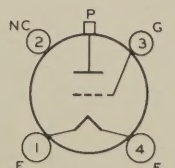

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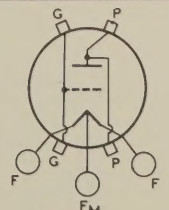
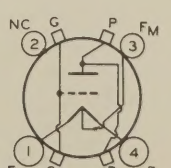
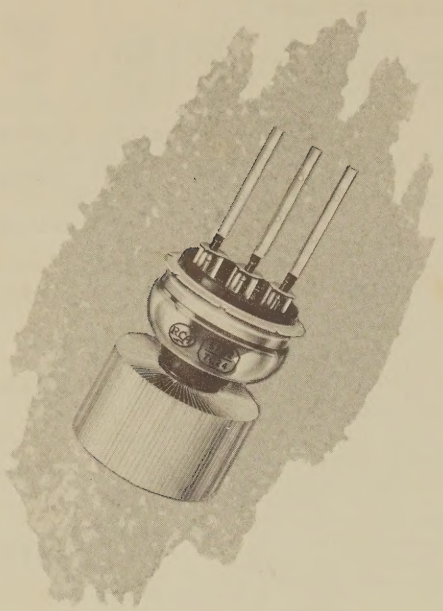
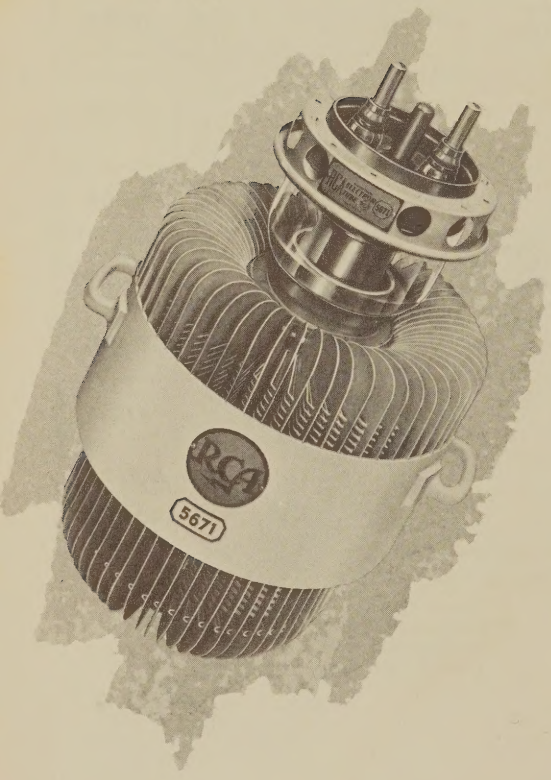


See Note 3
8012-A



See Note 4
8025-A

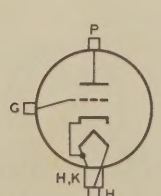




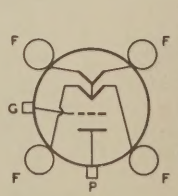
RCA Type	Description
TRIODES (Forced-Air-Cooled)	
2C39-A	Exceptionally high transconductance type with integral radiator. Useful up to 2500 Mc and above in cathode-drive circuits of the coaxial-cylinder type. Special terminal connections.
2C39-WA	The 2C39-WA is a military version of the 2C39-A and is intended for applications subject to considerable vibration and shock. It is directly interchangeable with the 2C39-A.
9C22	Not recommended for new equipment design. For new design, use the type 5671.
9C25	Cathode-drive type with a multi-strand single-phase thoriated-tungsten filament. Utilizes grid-flange and filament-header construction. For induction and dielectric heating applications. Special terminal connections.
826	Not recommended for new equipment design. For air-cooled operation, see page 4.
833-A	Rugged, high-perveance type with thoriated-tungsten filament. Special post terminals. For air-cooled ratings, see page 4.
889R-A	Radiator type with tungsten filament. For use in high power broadcast and rf heating applications. Special terminal connections.
891-R	Radiator type with a two-section tungsten filament. Especially designed for induction-heating applications. Special terminal connections.
892-R	Radiator type similar to type 891-R but has higher mu and slightly higher ratings. For use in broadcast and rf heating applications.
893A-R	Not recommended for new equipment design.
5588	Not recommended for new equipment design. For new design, use the type 6161.
5671	Radiator type with multistrand thoriated-tungsten filament. For use as modulator and power amplifier in 50-kw AM broadcast service. Special terminal connections.
5713	Compact, vhf radiator type with unipotential cathode. For cathode-drive circuits of the transmission-line type. Special terminal connections.
5762/ 7C24	Radiator type for TV, FM, AM, and industrial applications up to 220 Mc in cathode-drive circuits. Three multiple-ribbon filament leads. Special terminal connections.
5786	Radiator type for industrial applications; also useful in broadcast service. Special terminal connections.

Note 5: Diametrically opposite terminals must be connected together.
Note 6: Terminal No. 5 is above grid arm.

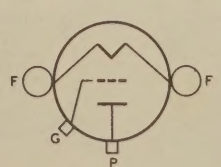
For Key to Base and Envelope Connection Diagrams, see page 2.



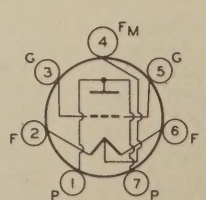
2C39-A 2C39-WA 5588 5713



See Note 5
9C22



9C25 5671



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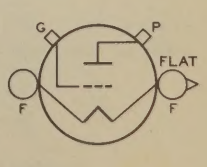


833-A

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings† Absolute Values			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Approx. Power Output Watts	
TRIODES (Forced-Air-Cooled)																	
6.3	1	$2\frac{3}{4}$	$1\frac{17}{64}$	100	C·P C·T C·M	— — —	600 1000 1000	— — —	70 100 100	— 800 —	— −45 —	— — —	— 0.08 —	— — —	— 6[m] —	— 27[b] —	**2C39-A**
For data, refer to MIL-E-1/778C (Navy) specification.[ff]																	**2C39-WA**
19.5	415	25	$8\frac{1}{2}$[a]	41	C·T	5	17000	100000	20000	17000	−1600	—	5	—	1450	65000	**9C22**
6	285	$17\frac{3}{8}$	$7\frac{1}{8}$[a]	32	B C·P C·T	— 30 30	11500 9000 11500	40000 26000 40000	17500 11500 17500	10500 8000 11000	−250 −650 −540	1310 — —	7[z] 2.5 3.6	3300 — —	1500 3000 3750	50000 18000 32500	**9C25**
7.5	4	$3\frac{11}{16}$	$2\frac{3}{8}$	31	•C·T	250	1250	175	75	1250	−125	—	0.125	—	7.7	120	**826**
10	10	$8\frac{13}{16}$	$4\frac{19}{32}$	35	•B •C·P •C·T	— 20 20	4000 4000 4000	1800 1800 2000	450 350 450	4000 4000 4000	−100 −325 −225	510 — —	0.9[z] 0.45 0.5	11000 — —	38 42 35	2700 1500 1600	**833-A**
11	125	$11\frac{7}{8}$	$5\frac{15}{32}$[a]	21	B C·P C·T	— 40 40	8500 6000 8500	12000 6000 16000	5000 3000 5000	7500 6000 7500	−300 −900 −800	1700 — —	3.2[z] 1 2	5000 — —	150 140 400	15000 4000 10000	**889R-A**
11[cc]	60	22	$6\frac{15}{32}$[a]	8.5	B C·T	— 1.6	10000 10000	10500 15000	3500 4000	8000 10000	−860 −2000	2260 —	2.1[z] 1.33	8000 —	50 375	10000 10000	**891-R**
11[cc]	60	22	$6\frac{1}{2}$[a]	50	B C·P C·T	— 1.6 1.6	12500 10000 12500	12000 10000 18000	4000 2500 4000	8000 8000 10000	−60 −1300 −1300	1000 — —	2.3[z] 0.82 1.4	6800 — —	84 430 495	10500 5000 10000	**892-R**
10[dd]	61[cc]	28	$8\frac{13}{16}$[a]	34.5	C·T	5	20000	70000	20000	18000	−1000	—	3.6	—	340	50000	**893A-R**
6.3	2.5	3.4	1.76	16	C·T	1200	1000	250	200	835	−70	—	0.3	—	32	100[d]	**5588**
11	285	25	8.5[a]	40	B C·P C·T	— 10 10	15000 12500 15000	90000 55000 100000	25000 17000 25000	15000 12500 15000	−320 −1500 −1500	1600 — —	10[z] 4 6	3320 — —	600 1960 2040	100000 40000 70000	**5671**
3.3	11.5	$4\frac{7}{8}$	$2\frac{1}{16}$	25	C·T	220	1500	450	250	1500[ee]	+175π	—	0.3	—	65	325	**5713**
12.6	29	$7\frac{1}{8}$[c]	$4\frac{11}{16}$	29	B C·P C·T·F	— 30 30	6200 5000 6200	8700 5000 8700	3000 2000 3000	4700 4700 6000	−200 −400 −550	900 — —	2.8[z] 0.96 1.25	3640 — —	195 720 1225	8800 4200 7000	**5762/ 7C24**
11	12.5	$9\frac{5}{8}$	2.895	32	B C·P C·T	— 160 160	4000 2500 3000	1500 1000 1500	600 400 600	3000 2500 3000	−95 −350 −200	470 — —	0.8[z] 0.4 0.5	8600 — —	30 75 36	1640 810 1000	**5786**

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

*For explanatory notes on Class of Service, see page 2.

†Unless otherwise specified, all values shown are for Continuous Commercial Service.

•Intermittent Commercial and Amateur Service.

[a] Maximum radius.

[b] Useful power output at 500 Mc under indicated conditions.

[c] Excluding flexible leads.

[d] At 1000 Mc under indicated conditions.

[m] Driver power output.

[z] Maximum-signal value.

[cc] Per section.

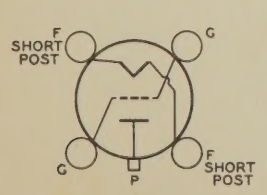
[dd] Per strand.

[ee] Referred to cathode terminal.

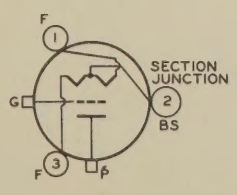
[ff] A copy of this specification may be obtained from the Bureau of Ships, Department of the Navy, Washington 25, D. C., Attn.: Publication Section, Code 695E1.

π Cathode-to-grid volts.

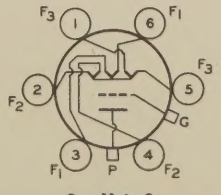
For Key to Base and Envelope Connection Diagrams, see page 2.



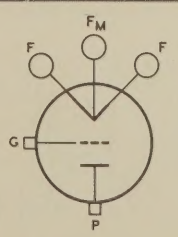
889R-A



891-R 892-R



See Note 6
893A-R



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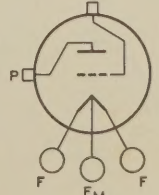

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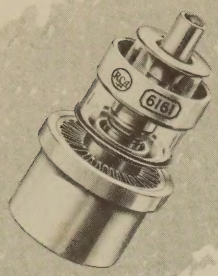
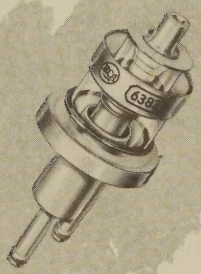
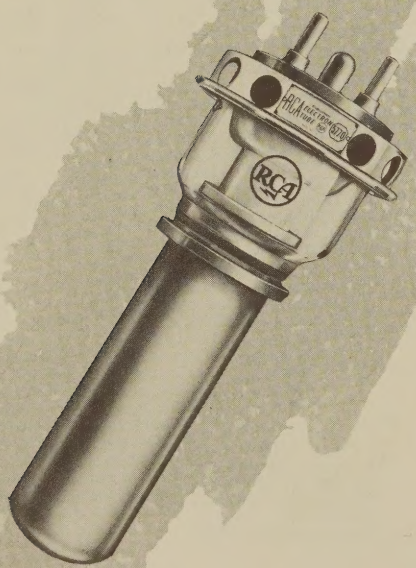




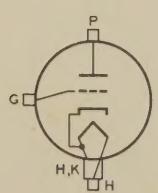


Type	Description
TRIODES (Forced-Air-Cooled)—Cont'd	
5946	Compact radiator type with unipotential cathode. For plate-pulsed oscillator and amplifier applications with full input up to 1300 Mc. Special terminal connections.
6161	Compact, radiator type for uhf service in television and cw applications. Utilizes coaxial-electrode structure for use in cathode-drive circuits of the coaxial-cylinder type. Special terminal connections.
8025-A	Not recommended for new equipment design. For air-cooled operation, see page 6.
TRIODES (Water-Cooled)	
9C21	Multi-strand single-phase tungsten-filament type. Utilizes grid-flange and filament-header construction. For high-power broadcast and rf-heating applications. Special terminal connections.
207	Not recommended for new equipment design.
880	Tungsten-filament type. Used in high-power broadcast and rf-heating applications. Special terminal connections.
889-A	Tungsten-filament type with special terminal connections. Useful in rf-heating and high-power broadcast applications.
891	Two-section tungsten-filament type. Special terminal connections.
892	Two-section tungsten-filament type similar to type 891 except for higher mu.
893-A	Not recommended for new equipment design.
5770	Improved version of 9C21. Efficient thoriated-tungsten filament saves 60 percent in filament power. For high-power broadcast and rf-heating applications. Special terminal connections. Typical class C telegraphy values are for cathode-drive service.
5771	Improved version of 880. Efficient thoriated-tungsten filament saves 70 percent in filament power. Special terminal connections. Can deliver 53 kw approx. in class C telegraph service up to 1.6 Mc.
TRIODE (Liquid-Cooled)**	
6383	Very compact, liquid-and-forced-air-cooled type with coaxial-electrode structure. Especially suited to uhf applications requiring compactness, light weight, and high power output. Typical class-C values are for cathode-drive service. Special terminal connections.

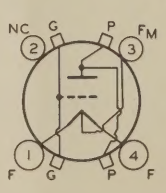
Note 7: Grid terminals are spaced diametrically wider than filament terminals.

** Suitable coolants are: Distilled Water, Butyl Carbitol, Ethylene Glycol, Monsanto OS45 (High Temperature Hydraulic Fluid), and Dow Corning No. 200 Fluid.

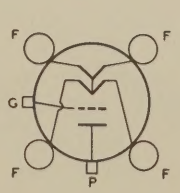
For Key to Base and Envelope Connection Diagrams, see page 2.



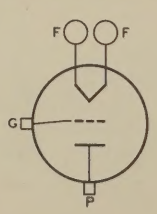
5946 6161 6383



8025-A



9C21



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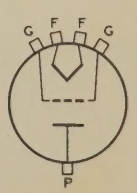


See Note 7
880 5771

Cathode		Max. Dimensions Inches		Amplification Factor	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings† Absolute Values			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts	Approx. Power Output Watts	
TRIODES (Forced-Air-Cooled)—Cont'd																	
6.3	3.4	$3\frac{13}{32}$	1.76	25	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 10 μsec in any 1000 μsec Interval; Peak Positive-Pulse Plate Volts, 7500; Plate Input, 340 watts; Peak Plate Amperes, 4.5; Plate Dissipation, 250 watts													5946
6.3	3.4	$3\frac{13}{32}$	1.76	25	■B-T	900	1600	560	250	1600[h]	100π	—	0.35	—	75[m]	230[p]	6161
					C-T-F	900	1600	400	250	1650[h]	150π	—	0.25	—	80[m]	180[p]	
					C-M	Doubler to 900 Mc →				1675[h]	175π	—	0.25	—	100[m]	140[p]	
6.3	1.92	$4\frac{15}{16}$	$1\frac{5}{64}$[a]	18	C-T	500	1000	75	40	1000	−90	—	0.05	—	1.6	35	8025-A
TRIODES (Water-Cooled)																	
19.5	415	$24\frac{1}{2}$	$9\frac{1}{2}$	40	B	—	15000	90000	40000	14000	−300	1050	7.1[z]	4000	150	61000	9C21
					C-P	15	12500	50000	28000	12500	−1670	—	3.5	—	1570	38000	
					C-T	15	17000	150000	40000	17000	−1600	—	7.9	—	1800	100000	
22	52	$20\frac{1}{4}$[c]	$6\frac{15}{32}$[a]	20	C-T	1.6	15000	30000	10000	12000	−1600	—	1.67	—	235	15000	207
12.6	320	$11\frac{1}{2}$	7	20	B	—	10500	40000	15000	10000	−450	1680	7[z]	3100	540	46000	880
					C-P	25	10500	36000	12000	10000	−1200	—	3.6	—	1100	27000	
					C-T	25	10500	60000	20000	10000	−1000	—	6	—	1500	40000	
11	125	$10\frac{11}{16}$	$3\frac{5}{8}$	21	B	—	8500	12000	5000	7500	−300	1700	3.2[z]	5000	150	15000	889-A
					C-P	50	6000	6000	3000	6000	−900	—	1	—	140	4000	
					C-T	50	8500	16000	5000	7500	−800	—	2	—	400	10000	
11[cc]	60	$20\frac{7}{8}$	$6\frac{15}{32}$[a]	8.5	B	—	15000	20000	5000	12500	−1450	3760	2.5[z]	12000	245	22000	891
					C-T	1.6	12000	18000	6000	10000	−2000	—	1.33	—	375	10000	
11[cc]	60	$20\frac{7}{8}$	$6\frac{15}{32}$[a]	50	B	-	15000	20000	7500	12500	−170	1370	2.8[z]	10000	160	22000	892
					C-P	1.6	10000	10000	6600	10000	−1600	—	0.78	—	460	6000	
					C-T	1.6	15000	30000	10000	12000	−1600	—	1.55	—	565	14000	
10[dd]	61[cc]	$26\frac{3}{4}$	$6\frac{9}{16}$[a]	34.5	C-T	5	20000	70000	20000	18000	−1000	—	3.6	—	340	50000	893-A
11	285	$24\frac{1}{2}$	$9\frac{1}{2}$	40	B	—	15000	90000	50000	15000	−320	1560	12[z]	2640	688	117000	5770
					C-P	20	12500	60000	33000	12500	−1500	—	4.5	—	2160	45000	
					C-T	20	17000	150000	50000	17000	−1450	—	8.5	—	11200	114000	
7.5	170	$11\frac{5}{16}$	7	20	B	—	12500	45000	22500	12500	−600	1900	6.4[z]	4400	430	55000	5771
					C-P	25	10000	40000	15000	10000	−840	—	3.8	—	1010	29000	
					C-T	25	12500	60000	22500	12500	−630	—	4.8	—	1050	44000	
TRIODE (Liquid-Cooled)**																	
6.3	3.4	$4\frac{9}{32}$	1.760	25	A_1	—	1500	600	600	1500	−40	35	0.25	1550[j]	—	60	6383
					C-P	2000	1200	400	400	1280[h]	80π	—	0.335	—	53[m]	100[e]	
					C-T-F	2000	1500	600	600	1580[h]	80π	—	0.4	—	85[m]	150[e]	
					C-M	Doubler to 900 Mc →				1675[h]	175π	—	0.4	—	160[m]	225[p]	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

* For explanatory notes on Class of Service, see page 2.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

■ Typical operating data shown for this service are for synchronizing-level conditions per tube for a band width of 6 Mc.

[a] Maximum radius.

[c] Excluding flexible leads.

[e] Useful power output at 1500 Mc under indicated conditions.

[h] Referred to grid terminal.

[j] Single tube plate-load value.

[m] Driver power output.

[p] Useful power output.

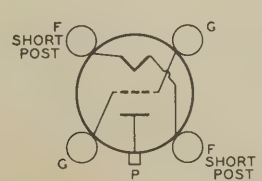
[z] Maximum-signal value.

[cc] Per section.

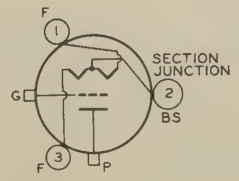
[dd] Per strand.

π Cathode-to-grid volts.

For Key to Base and Envelope Connection Diagrams, see page 2.



889-A



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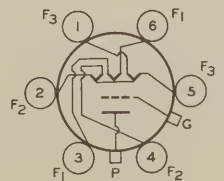

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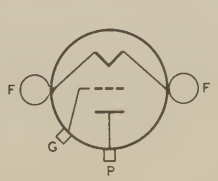

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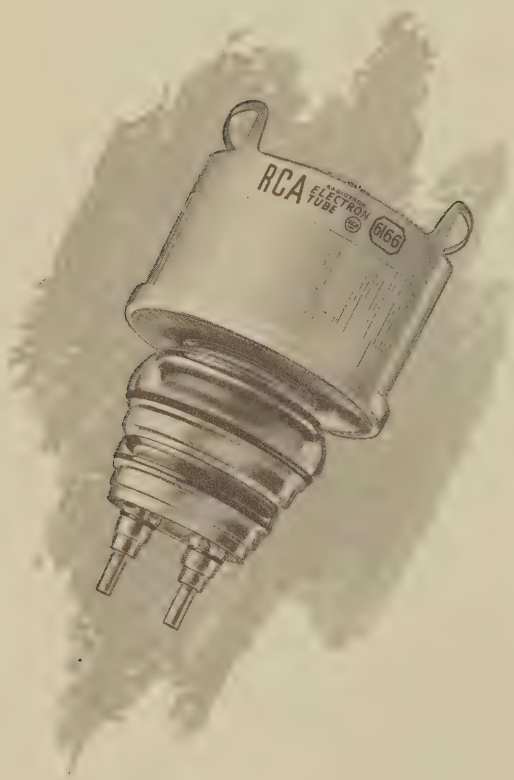
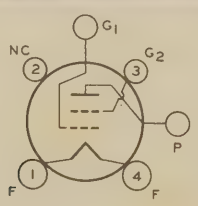


RCA Type	Description
TETRODES (Air-Cooled)	
860	Not recommended for new equipment design.
861	Not recommended for new equipment design.
865	Not recommended for new equipment design.
TETRODE (Forced-Air-Cooled)	
6166	Radiator type with thoriated-tungsten filament. Coaxial-cylinder type for vhf television and cw applications. Special terminal connections.
TETRODE (Water-Cooled)	
8D21	Not recommended for new equipment design.
BEAM POWER TUBES (Forced-Air-Cooled)	
4-65A	Small, thoriated-tungsten filament type for power amplifier and oscillator service. Septar-type 5-pin base. Skirted small cap.
4-125A/ 4D21	Thoriated-tungsten filament type with special metal-shell giant 5-pin base. Skirted small cap.
4-250A/ 5D22	Thoriated-tungsten filament type for use as power amplifier and modulator. Special metal-shell giant 5-pin base. Skirted small cap.
4-1000A	Thoriated-tungsten filament type. For vhf service as amplifier, oscillator, and modulator. Special 5-contact socket.
4X150A	Very small and compact uhf radiator type with unipotential cathode. For power amplifier or oscillator service. May also be used as a wide band amplifier in video applications. Special 8-pin base.
4X150D	Like the 4X150A but has 26.5-volt heater for aircraft use.
4X500A	Small, compact, radiator type with thoriated-tungsten filament. For use as rf power amplifier and oscillator. Special terminal connections.
827-R	Radiator type with thoriated-tungsten filament. For FM, vhf television and general broadcast services. Special terminal connections.

Note 8: At the lower frequencies, pin 1 is used for grid-No. 2 connection; at the higher frequencies, the contact ring is used.

For Key to Base and Envelope Connection Diagrams, see page 2



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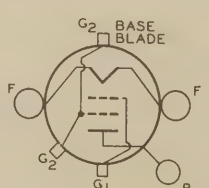

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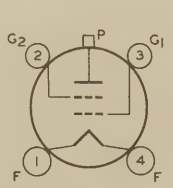
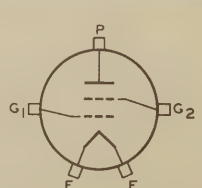


865



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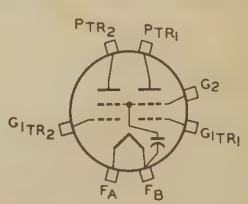


8D21

Cathode		Max. Dimensions Inches		Transconductance Micromhos	Class of * Service	Max. Frequency for Full Input Mc	Max. Plate Ratings †			Typical Operating Conditions †							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Approx. Power Output Watts	
TETRODES (Air-Cooled)																	
10	3.25	8¾[c]	4¼[a c]	1100	C·T	30	3000	300	100	3000	—	300	−150	0.085	7	165	**860**
11	10	17 7/32	6 5/8[a c]	2400	C·T	20	3500	1200	400	3500	—	500	−250	0.3	30	700	**861**
7.5	2	5¾	2 1/16	750	C·T	15	750	45	15	750	—	125	−80	0.04	1	16	**865**
TETRODE (Forced-Air-Cooled)																	
5	181	11.63	6.38	10[gg]	△ B·T	216	6000	22000	10000	5800	—	1200	−130	3.45	800[m]	12000	**6166**
					C·P	60	5000	10000	6600	4700	—	800	−280	1.56	180[m]	5500	
					C·T·F	60	6900	18000	10000	6400	—	1200	−310	2.75	75[m]	11600	
TETRODE (Water-Cooled)																	
3.2	125	12 9/32	5¾	5[gg] per Unit	■ C·G·T	300	6000	10000	6000	5000	—	800	−220	1.9	300 to 500	5300[f]	**8D21**
BEAM POWER TUBES (Forced-Air-Cooled)																	
6	3.5	4⅜	2⅜	4000	AB_2	—	3000	—	65	1800	—	250	−50	0.22[z]	1.3	270	**4-65A**
				5[gg]	C·P	50	2500	—	45	2500	—	250	−135	0.11	2.6	230	
					C·T·F	50	3000	—	65	3000	—	250	−100	0.115	1.7	280	
5	6.5	5 11/16	2⅞	2450	C·P	120	2500	—	85	2500	—	350	−210	0.152	3.3	300	**4-125A/ 4D21**
				5.9[gg]	C·T·F	120	3000	—	125	3000	—	350	−150	0.167	2.5	375	
5	14.5	6⅜	3 9/16	4000	AB_2	—	4000	—	250	3000	—	300	−53	0.473[z]	1.9	1040	**4-250A/ 5D22**
				5.1[gg]	C·P	110	3200	—	165	3000	—	400	−310	0.225	3.2	510	
					C·T·F	110	4000	—	250	4000	—	500	−225	0.312	2.5	1000	
7.5	21	9⅝	5¼	10000	C·T·F	110	6000	—	1000	6000	—	500	−200	0.7	15	3400	**4-1000A**
6	2.6	2 15/32	1.635	5[gg]	AB_2	—	1250	—	150	1250	—	300	−44	0.475[z]	0.15	425	**4X150A**
					C·P	500	1000	—	100	1000	—	250	−105	0.2	2	140[g]	
					C·T·F	500	1250	—	150	1250	—	280	−115	0.2	30[m]	140[p]	
26.5	0.58	Same as 4X150A except for heater rating.															**4X150D**
5	13.5	4¾	2⅝	5200	C·T·F	120	4000	—	500	4000	—	500	−150	0.315	5	835[i]	**4X500A**
				6.2[gg]													
7.5	25	6⅜[c]	4 11/16	16[gg]	C·P	110	3000	1200	550	3000	—	750	−325	0.4	68	825	**827-R**
					C·T·F	110	3500	1500	800	3500	—	700	−300	0.428	50	1050	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

* For explanatory notes on Class of Service, see page 2.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

△ Typical operating data for this service are for synchronizing-level conditions per tube for a band width of 7 Mc.

■ Typical operating data shown for this service are for synchronizing-level conditions per tube for a band width of 6 Mc.

[a] Maximum radius.

[c] Excluding flexible leads.

[f] At 216 Mc under indicated conditions.

[g] At 165 Mc under indicated conditions.

[i] At 110 Mc under indicated conditions.

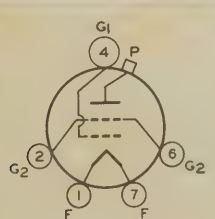
[m] Driver power output.

[p] Useful power output.

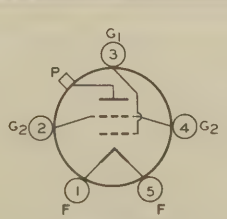
[z] Maximum-signal value.

[gg] Mu-factor, grid No. 2 to grid No. 1.

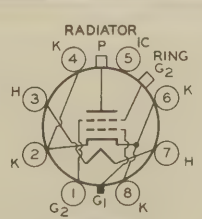
For Key to Base and Envelope Connection Diagrams, see page 2.



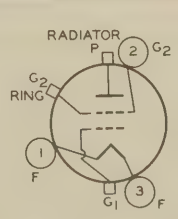
4-65A



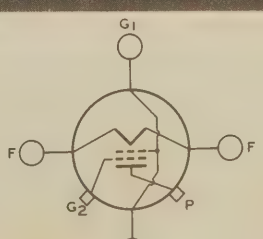
4-125A/4D21
4-250A/5D22 4-1000A



See Note 8
4X150A 4X150D



4X500A



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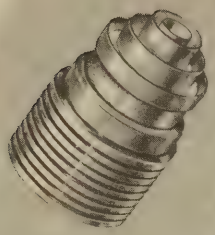
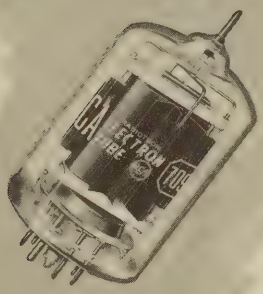
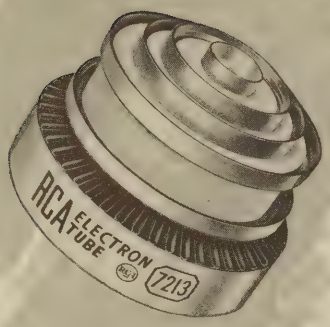


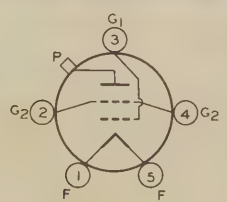




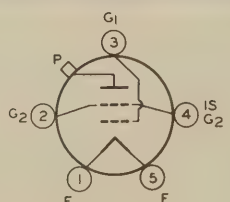
Type	Description
BEAM POWER TUBES (Forced-Air-Cooled)—Cont'd	
6155/ 4-125A	Similar to type 4-125A/4D21 but has special, button, giant 5-pin base.
6156/ 4-250A	Similar to type 4-250A/4D22 but has special, button, giant, 5-pin base and small cap.
6181	Radiator type for uhf service in television and cw applications. Capable of delivering a synchronizing-level power output of 1200 watts in broad-band television service. Coaxial-electrode structure. Coated, unipotential cathode. Special terminal connections.
6816	Very small, compact uhf radiator type with unipotential cathode. For power-amplifier, oscillator, and modulator service in mobile and fixed equipment. For coaxial-cylinder cavity or parallel-line circuits. Has ceramic-metal seals. Special terminal connections.
6884	Same as the 6816 but has 26.5-volt heater for aircraft use.
7034/ 4X150A	Very small, compact vhf radiator type with unipotential cathode for use in af, rf, and wide-band video applications. Unilaterally interchangeable with the 4X150A. Can be used at lower ratings up to 500 Mc.
7035/ 4X150D	Same as the 7034/4X150A but has 26.5-volt heater for aircraft use.
7094	A high-perveance, high-gain type of compact design for fixed or mobile applications. For use as an rf power amplifier, oscillator, or modulator. May be operated up to 175 Mc at reduced ratings.
7203/ 4CX250B	Very small, vhf, radiator type with ceramic-metal seals and coaxial-electrode structure for FM, TV, and general rf service. The 7203 is unilaterally interchangeable with the 4X250B and bilaterally interchangeable with the 4CX250B. Special terminal connections.
7204/ 4X250F	Same as 7203/4CX250B but has 26.5-volt heater for aircraft use.
7213	Small, uhf radiator type having ceramic-metal seals, a coaxial-electrode structure, and a matrix-type oxide-coated unipotential cathode. For use as a power amplifier and oscillator in fixed-station or airborne equipment. Special terminal connections.

Note 8: At the lower frequencies, pin 1 is used for grid-No. 2 connection; at the higher frequencies, the contact ring is used.

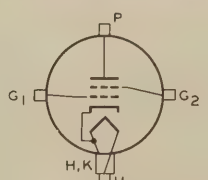
For Key to Base and Envelope Connection Diagrams, see page 2.



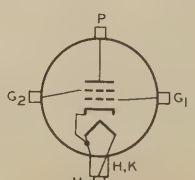
6155/4-125A



6156/4-250A



6181



6816 6884 7213

Cathode		Max. Dimensions Inches		Transconductance Micromhos	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Approx. Power Output Watts	
BEAM POWER TUBES (Forced-Air-Cooled)—Cont'd																	
5	6.5	$5\frac{3}{32}$	$2\frac{7}{16}$	6.2^{gg}	C·P C·T·F	120 120	2500 3000	415 625	83 125	2500 3000	— —	350 350	−210 −150	0.152 0.167	1.7 2	300 375	**6155/ 4-125A**
5	14.1	$5\frac{29}{32}$	$3\frac{7}{16}$	5.1^{gg}	AB_2 C·P C·T·F	— 75 75	4000 3200 4000	1000 825 1250	250 165 250	3000 3000 4000	— — —	300 400 500	−55 −310 −225	0.55^{z} 0.225 0.312	3.8 4.4 3.4	1240 510 1000	**6156/ 4-250A**
120 Max.	1.6	$7\frac{1}{4}$	$5\frac{1}{32}$	7^{gg}	◆B·T C·P C·T·F	900 900 900	2000 1600 2000	3500 1650 2500	2000 1300 2000	1875λ 1775λ 1910λ	— — —	550λ 550λ 550λ	75φ 175φ 110φ	1.7 1 0.9	200^{m} 250^{m} 150^{m}	1200^{p} 950^{k} 600	**6181**
6.3	2.1	1.955	1.265	18^{gg}	AB_2 C·P C·T·F	— 1200 1200	1000 800 1000	180 120 180	115 75 115	850 700 900	— — —	300 250 300	−15 −50 −22	0.355^{z} 0.13 0.17	3^{m} 5^{m}	140 45^{k} 40^{p}	**6816**
26.5	0.52	Same as 6816 except for heater rating.															**6884**
6	2.6	$2\frac{15}{32}$	1.635	5^{gg}	AB_2 C·P C·T·F	— 150 150	2000 1600 2000	— — —	250 165 250	2000 1600 2000	— — —	300 250 250	−50 −118 −88	0.5^{z} 0.2 0.25	0.2 3 2.5	630 230 370	**7034/ 4X150A**
26.5	0.58	Same as 7034/4X150A except for heater rating.															**7035/ 4X150D**
6.3	3.2	5	2.56	10000 7^{gg}	•AB_1 •C·P •C·T·F	— 60 60	2000 1200 1500	400 335 500	125 83 125	2000 1200 1500	— — —	400 400 400	−65 −130 −100	0.4^{z} 0.275 0.33	0 5^{m} 4^{m}	560 240^{p} 340^{p}	**7094**
6	2.6	2.464	1.640	5.2^{gg}	□B·T C·P C·T·F	216 500 500	2000 1500 2000	— — —	250 165 250	2000 1500 2000	— — —	350 250 250	−70 −100 −90	0.36 0.2 0.25	1.2 0.7 1	440 235 400	**7203/ 4CX250B**
26.5	0.58	Same as 7203/4CX250B except for heater rating.															**7204/ 4X250F**
5.5	17.5	3.34	3.75	17^{gg}	C·P C·T·F	1215 1215	2000 2500	1700 2500	1000 1500	2000 2500	— —	500 500	−30 −30	0.83 1	55^{m} 75^{m}	800^{l} 1350^{l}	**7213**

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

*For explanatory notes on Class of Service, see page 2.

†Unless otherwise specified, all values shown are for Continuous Commercial Service.

•Intermittent Commercial and Amateur Service.

□Typical operating data for this service are for synchronizing-level conditions per tube for a band width of 5 Mc.

◆Typical operating data for this service are for synchronizing-level conditions per tube for a band width of 8 Mc.

^{h}Referred to grid terminal.

^{k}Useful power output at 400 Mc under indicated conditions.

^{l}Useful power output at 600 Mc under indicated conditions.

^{m}Driver power output.

^{p}Useful power output.

^{z}Maximum-signal value.

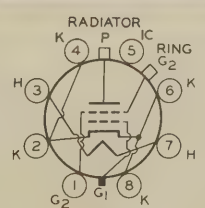
^{ee}Referred to cathode terminal.

^{gg}Mu-factor, grid No. 2 to grid No. 1.

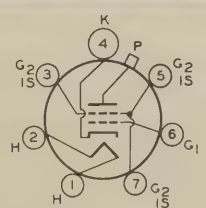
λ Referred to grid-No. 1 terminal.

φ Cathode-to-grid-No. 1 volts.

For Key to Base and Envelope Connection Diagrams, see page 2.



See Note 8
7034/4X150A 7035/4X150D



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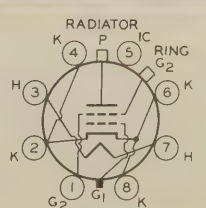
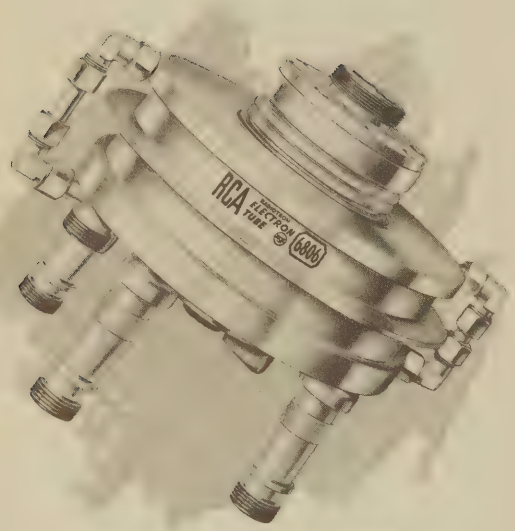


See Note 8
7203/4CX250B 7204/4X250F

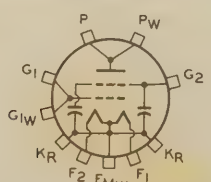


Type	Description
BEAM POWER TUBES (Water-Cooled)	
6448	Ceramic-metal seal type with two-section thoriated-tungsten filament. Has coaxial-electrode structure. Provides high gain as a grid-driven power amplifier. Special terminal connections.
6806	Ceramic-metal seal type with two-section thoriated-tungsten filament. Has coaxial-electrode structure. Provides high gain as a grid-driven power amplifier. Special terminal connections.
6952[hh]	A ceramic-metal-seal type with matrix-type oxide-coated filament. Has coaxial-electrode structure. For use as a grid-driven pulse amplifier from 174 to 600 Mc and higher. Power gain of at least 100 at 225 Mc.
BEAM POWER TUBE (Liquid-Cooled)††	
2029	Ceramic-metal-seal type with two-section thoriated-tungsten filament. For use as a grid-driven amplifier from 225 to 1000 Mc. Designed specifically for applications involving extreme ranges of ambient temperature. Special terminal connections.
SHIELDED-GRID BEAM TRIODE (Water-Cooled)	
6949	A super-power shielded-grid beam triode with very high power gain. In unmodulated class C service, the 6949 has a maximum plate input of 1000 kilowatts. Can be operated at frequencies above 75 Mc at reduced ratings.
BEAM POWER TUBES AND PENTODES (Air-Cooled)	
2E24	Beam power tube with quick-heating coated filament for mobile communications equipment. Octal 8-pin base. Small cap.
2E26	Beam power tube of the heater-cathode type. For use as af power amplifier and modulator and as rf power amplifier and oscillator. Octal 8-pin base. Small cap.
3A4	Power pentode of the 7-pin miniature type. Coated filament. Useful as rf power amplifier in portable low-power battery-operated equipment.
3E29	High-perveance, twin beam power tube with unipotential cathodes. For use in rectangular-wave pulse-modulator service. Medium molded-flare septar 7-pin base.
4E27/ 8001	Beam power tube with tantalum plate and thoriated-tungsten filament. Medium metal shell, giant 7-pin bayonet base. Wire top terminal.
4E27A/ 5-125B	An improved version of the 4E27 having higher power output capability. Unilaterally interchangeable with types 4E27, 257, 257B, and 8001.
802	Not recommended for new equipment design.

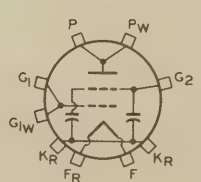
[hh] Government end-use only.

†† For ambient temperatures below 0° C, recommended coolant is Minnesota Mining & Mfg. Co.'s Inert Liquid FC75; above 0° C, coolant may be water.

For Key to Base and Envelope Connection Diagrams, see page 2.



2029 6448 6806



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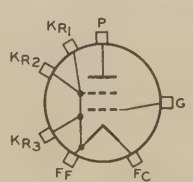

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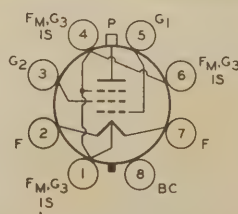
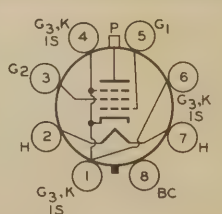


2E24



2E26

Cathode		Max. Dimensions Inches		Transconductance Micromhos	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Approx. Power Output Watts	
BEAM POWER TUBES (Water-Cooled)																	
1.35[cc]	1000[cc]	7.97	11.38	8[gg]	△ B·T	1000	7000	49000	26000	6500	—	950	−140	6.8	1000[m]	12000[q]	**6448**
					C·P	1000	4500	20250	16500	4250	—	600	−200	4	1000[m]	4500[n]	
					C·T·F	1000	7000	45500	26000	6500	—	800	−140	6.3	800[m]	11000[n]	
1.35[cc]	1000[cc]	7.97	11.38	8[gg]	△ B·T	1000	9000	70000	36000	8000	—	1000	−140	7.8	1000[m]	19000[q]	**6806**
					C·P	1000	5500	25000	17000	5000	—	800	−180	4.25	300[m]	10000[k]	
					C·T·F	1000	9000	60000	35000	7500	—	1000	−175	6.8	750[m]	13500[n]	
0.95	460 to 530	8.93	11.25	7[gg]	Maximum Ratings for Plate-Pulsed Amplifier Service—Class B: Maximum "On" Time, 12 microseconds; Peak Positive-Pulse Plate Volts, 30,000; Plate Input (Ave.), 5000 watts; Peak Plate Amperes, 55; Plate Dissipation (Ave.), 3000 watts												**6952[hh]**
BEAM POWER TUBE (Liquid-Cooled)																	
1.35[cc]	1000[cc]	8.22	11.38	8[gg]	C.P	1000	5500	25000	15000	5000	—	800	−180	4.25	200[m]	10000[k]	**2029**
					C.T.F	1000	9000	60000	30000	8500	—	1000	−175	6.75	300[m]	25000[k]	
SHIELDED-GRID BEAM TRIODE (Water-Cooled)																	
7.3 to 7.8	1040 to 1130	40	10.06	60[θ]	C·T·F	75	20000	1000 Kw	400 Kw	17500	—	—	−625	40	2000	500 Kw	**6949**
BEAM POWER TUBES AND PENTODES (Air-Cooled)																	
6.3	0.65	3 21/32	1 5/16	3200	• C·P	125	500	27	9	500	—	180	−45	0.054	0.16	18	**2E24**
				7.5[gg]	• C·T	125	600	40	13.5	600	—	195	−50	0.066	0.21	27	
6.3	0.8	3 21/32	1 5/16	3500	• AB_2	—	750	37.5	12.5	500	—	125	−15	0.150[z]	0.36	54	**2E26**
				6.5[gg]	• C·P	125	500	27	9	500	—	180	−50	0.054	0.15	18	
					• C·T·F	125	600	40	13.5	600	—	185	−45	0.066	0.17	27	
1.4[ii] / 2.8[jj]	0.2 / 0.1	2 1/8	3/4	2250	A_1	—	150[s]	—	2[s]	150	—	90	−8.4	0.013	—	0.7	**3A4**
					C·T[kk]	10	150[s]	3[s]	2[s]	150	—	135	—	0.018	—	1.2	
6.3[ii] / 12.6[jj]	2.25 / 1.125	4 5/16	2 3/8	8500	9[gg]	*Max. ratings for modulator service (rectangular-wave shape) for units in parallel, a duty factor between 0.0001 and 1.0, and a max. averaging time of 1200 μsec in any interval:* DC Plate Supply Voltage = 5000 volts; Peak Plate Current = 10 amp. (duty factor of 0.001); Plate Input = 85 watts; Plate Dissipation = 15 watts.											**3E29**
5	7.5	6 3/16	2 11/16	2800	C·P	75	3000	250	65	2500	60	600	−200	0.1	0.1	200	**4E27/ 8001**
					C·T	75	4000	300	75	3000	60	750	−200	0.1	0	235	
5	7.5	6 3/16	2 3/4	2150	C·P	75	3200	—	85	2500	0	500	−205	0.152	2	295	**4E27A/ 5-125B**
				5[gg]	C·T	75	4000	—	125	3000	0	750	−250	0.167	0.9	375	
6.3	0.9	5 3/4	2 1/16	2250	• C·T	30	600	33	13	600	40	250	−120	0.055	0.3	23	**802**

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

* For explanatory notes on Class of Service, see page 2.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

• Intermittent Commercial and Amateur Service.

△ Typical operating data for this service are for synchronizing-level conditions per tube for a band width of 7 Mc.

[k] Useful power output at 400 Mc under indicated conditions.

[m] Driver power output.

[n] Useful power output at 900 Mc under indicated conditions.

[q] Useful power output at 800 Mc under indicated conditions.

[s] Design-center values.

[z] Maximum-signal value.

[cc] Per section.

[gg] Mu-factor, grid No. 2 to grid No. 1.

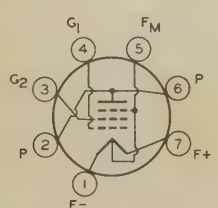
[ii] Parallel filament arrangement.

[jj] Series filament arrangement.

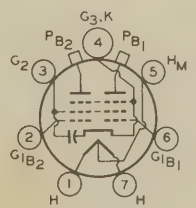
[kk] Typical operating values shown are with parallel filament arrangement.

[θ] Amplification factor.

For Key to Base and Envelope Connection Diagrams, see page 2.



3A4



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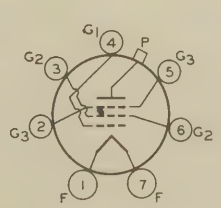
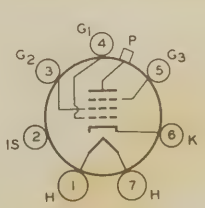


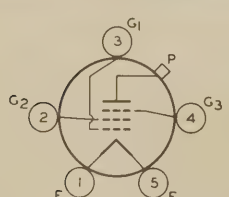
4E27/8001 4E27A/5-125B



802

Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd	
803	Not recommended for new equipment design.
804	Not recommended for new equipment design.
807	Beam power tube of the heater-cathode type. Features high power sensitivity; requires extremely low grid-driving power. Medium-micanol-shell, small 5-pin base. Small cap.
813	General-purpose beam power tube with thoriated-tungsten filament. Features high power sensitivity and extremely low grid-driving power. Medium metal shell, giant 7-pin bayonet base. Medium cap.
814	Beam power tube with thoriated-tungsten filament. Medium-micanol-shell, small 5-pin base. Small cap.
815	Twin beam power tube of the heater-cathode type. Octal 8-pin base. Two small caps.
828	Beam power tube with thoriated-tungsten filament. Medium-micanol-shell, small 5-pin base. Small cap.
829-B	Twin beam power tube of the heater-cathode type. Medium molded-flare, septar 7-pin base. Two wire top-terminals.
832-A	Twin beam power tube of the heater-cathode type. Medium molded-flare, septar 7-pin base. Two wire top-terminals.
837	Power pentode of the heater-cathode type. Medium-micanol-shell, medium 7-pin base. Small cap.
1613	Not recommended for new equipment design.
1614	Beam power tube of the heater-cathode metal type. Octal 7-pin base.
1619	Not recommended for new equipment design.
1624	Not recommended for new equipment design.
1625	Same as 807 except for 12.6-volt filament and medium 7-pin, micanol base.
5618	Seven-pin miniature pentode for use in mobile and other communications equipment. Has quick-heating, mid-tapped, coated filament for operation at either 6 or 3 volts.

For Key to Base and Envelope Connection Diagrams, see page 2.



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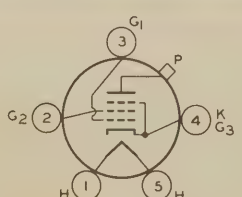

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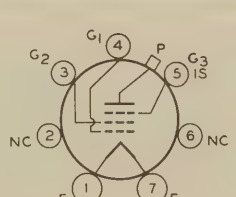

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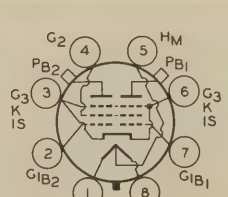

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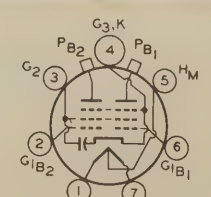
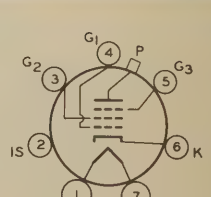


829-B 832-A



837

Cathode		Max. Dimensions Inches		Transconductance Micromhos	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Approx. Power Output Watts	
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd																	
10	5	9¼	2⁹⁄₁₆	4000	C·T	20	2000	350	125	2000	40	500	−90	0.16	2	210	**803**
7.5	3	7¹¹⁄₁₆	2⅛	3250	• C·T	15	1500	150	50	1500	45	300	−100	0.1	2	110	**804**
6.3	0.9	5¾	2⅛	6000 8[gg]	• AB_2 • C·P • C·T	— 60 60	750 600 750	90 60 75	30 25 30	750 600 750	— — —	300 300 250	−35 −85 −45	0.24[z] 0.1 0.1	0.2 0.4 0.3	120 44 54	**807**
10	5	7½	2⁹⁄₁₆	3750 8.5[gg]	• AB_1 • C·P • C·T	— 30 30	2500 2000 2250	450 400 500	125 100 125	2500 2000 2250	0 0 0	750 350 400	−95 −175 −155	0.29[z] 0.2 0.22	0 4.3 4	490 300 375	**813**
10	3.25	7¹¹⁄₁₆	2⅛	3300	• C·P • C·T	30 30	1250 1500	180 225	50 65	1250 1500	0 0	300 300	−150 −90	0.144 0.15	2 1.5	130 160	**814**
6.3[ii] 12.6[jj]	1.6 0.8	4⁹⁄₁₆	1³⁄₁₆[a]	4000 6.5[gg]	• C·P • C·T	125 125	400 500	60 75	20 25	400 500	— —	175 200	−45 −45	0.15 0.15	0.16 0.18	45 56	**815**
10	3.25	7¹¹⁄₁₆	2⅛	2700	• AB_1 • C·P • C·T	— 30 30	2000 1250 1500	270 200 270	80 70 80	2000 1250 1500	60 75 75	750 400 400	−120 −140 −100	0.27[z] 0.16 0.18	0 2.7 2.2	385 150 200	**828**
6.3[ii] 12.6[jj]	2.25 1.125	4⁵⁄₁₆	2⅜	8500 9[gg]	AB_1 • C·P • C·T	— 200 200	750 600 750	100 90 120	30 28 40	600 600 750	— — —	200 200 200	−18 −60 −50	0.11[z] 0.15 0.16	0 0.5 0.4	44 70 90	**829-B**
6.3[ii] 12.6[jj]	1.6 0.8	3⁵⁄₁₆	2⅜	3500 6.5[gg]	• C·P • C·T	200 200	600 750	36 50	15 20	600 750	— —	200 200	−70 −50	0.06 0.065	0.21 0.24	26 35	**832-A**
12.6	0.7	5¾	2⅛	3400	C·P C·T	20 20	400 500	20 32	8 12	400 500	40 40	140 200	−40 −75	0.045 0.06	0.3 0.4	11 22	**837**
6.3	0.7	3¼	1⁵⁄₁₆	2500	C·T	45	350	17.5	10	350	—	200	−35	0.05	0.22	9	**1613**
6.3	0.9	4⁵⁄₁₆	1⅝	6050	• C·P • C·T	80 80	375 450	35 45	21 25	375 450	— —	250 250	−50 −45	0.093 0.1	0.15 0.15	24.5 31	**1614**
2.5	2	4⁵⁄₁₆	1⅝	4500	C·T	45	400	30	15	400	0	300	−55	0.075	0.36	19.5	**1619**
2.5	2	5¾	2⅛	4000	C·T	60	600	54	25	600	—	300	−60	0.09	0.43	35	**1624**
12.6	0.45	5¾	2⅛	For maximum ratings and typical operating conditions, refer to Type 807.													**1625**
3[ii] 6[jj]	0.46 0.23	2⅝	¾	3600[ii] 3500[jj]	• C·T·F	100	300	7.5	5	300	0	75	−45	0.025	0.3	5.2[r]	**5618**
						100	300	7.5	5	—	—	—	—	—	—	—	
					• C·M	Doubler to 80 Mc →				300	0	75	−125	0.025	0.75	4.2	
						Tripler to 80 Mc →				300	0	75	−125	0.025	0.75	3.4	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

*For explanatory notes on Class of Service, see page 2.

†Unless otherwise specified, all values shown are for Continuous Commercial Service.

• Intermittent Commercial and Amateur Service.

[a] Maximum radius.

[r] At 80 Mc under indicated conditions.

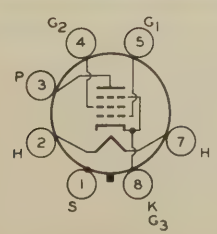
[z] Maximum-signal value.

[gg] Mu-factor, grid No. 2 to grid No. 1.

[ii] Parallel filament arrangement.

[jj] Series filament arrangement.

For Key to Base and Envelope Connection Diagrams, see page 2.



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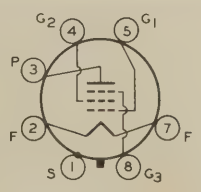

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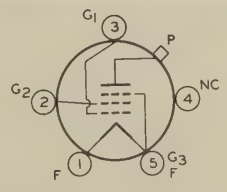

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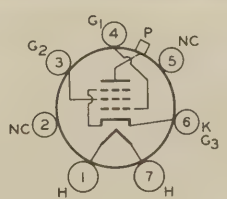

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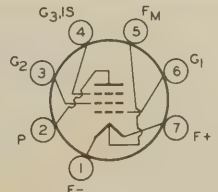
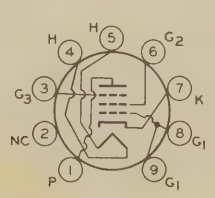


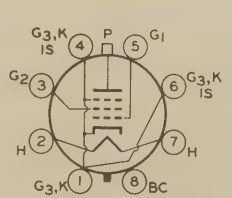
5618

Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd	
5763	Beam power tube of the 9-pin miniature type for use in compact, low-power mobile transmitters and in the low-power stages of fixed station transmitters. Particularly useful in doubler and tripler service. Has unipotential cathode.
6146	Small, sturdy, vhf beam power tube. Operates at relatively low plate voltages due to its high efficiency and high power sensitivity. For use as an amplifier, oscillator, and modulator in both fixed and mobile equipment. Useful up to 175 Mc at reduced ratings. Octal 8-pin base.
6159	Like the 6146 but has a 26.5-volt heater for use in aircraft service.
6293	Small, sturdy, beam power tube intended for pulse modulator service in both fixed and mobile equipment. Rated for service with duty factors up to 1.0 at a maximum averaging time of 10,000 microseconds. Octal 8-pin base.
6417	Like the 5763 but has a 12.6-volt heater.
6524	Small, sturdy, twin beam power tube. For use as a push-pull, rf power amplifier or frequency tripler in fixed and mobile equipment operating between 450 and 470 Mc. Features high power sensitivity and efficiency. Medium-button septar 7-pin base. Two wire top-terminals.
6850	Like the 6524 but has 12.6-volt heater.
6883	Like the 6146 but has 12.6-volt heater.
6893	Like the 2E26 but has 12.6-volt heater.
7054	Power pentode of the 9-pin miniature type for rf applications in mobile communications equipment operating from 6-cell storage battery systems.
7060	Dual-unit 9-pin miniature type combining a medium-mu triode and power pentode. For use in mobile communications equipment operating from 6-cell storage-battery systems. Values are for pentode unit.
7212	Small, vhf beam power type designed to withstand severe shock and vibration. For use as amplifier, oscillator, and modulator in both fixed and mobile equipment. Useful to 175 Mc at reduced ratings. Octal 8-pin base.

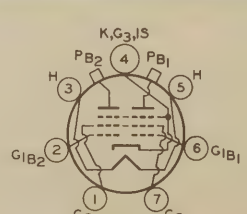
For Key to Base and Envelope Connection Diagrams, see page 2.



5763 6417



6146 6159 6293



6524 6850

Cathode		Max. Dimensions Inches		Transconductance Micromhos	Class of Service*	Max. Frequency for Full Input Mc	Max. Plate Ratings†			Typical Operating Conditions†							RCA Type
Volts	Amp.	Length	Diam.				Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid No. 3 Volts	Grid No. 2 Volts	Grid No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Approx. Power Output Watts	
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd																	
6	0.75	2 5/8	7/8	7000 16gg	• C·T·F	50	350	17	13.5	300	0	250	−60	0.05	0.35	7p	5763
					C·M	50	300	15	12	—	—	—	—	—	—	—	
						Doubler to 175 Mc →				300	0	mm	−75	0.04	0.6	2.1p	
						Tripler to 175 Mc →				300	0	mm	−100	0.035	0.6	1.3p	
6.3	1.25	3 13/16	1 23/32	7000 4.5gg	• AB2	—	750	90	25	750	—	165	−46	0.24z	0.4	131	6146
					• C·P	60	600	67.5	16.7	600	—	150	−87	0.112	0.4	52	
					• C·T·F	60	750	90	25	750	—	160	−62	0.12	0.2	70	
26.5	0.3	Same as 6146 except for heater rating.															6159
6.3	1.25	3 13/16	1 23/32	7000 4.5gg	*Max. ratings for rectangular-wave pulse-modulator service, a duty factor between 0.001 and 1.0, and a max. averaging time of 10,000 μsec in any interval:* DC Plate Supply Voltage = 3500 volts; Peak Plate Current = 3 amp. (duty factor of 0.003); Plate Input = 80 watts; Plate Dissipation = 10 watts.												6293
12.6	0.375	Same as 5763 except for heater rating.															6417
6.3	1.25	3 9/16	1 11/16	4500 8.5gg	• C·P	100	500	55	16.7	300	—	240	−60	0.095	7m	12t	6524
										500	—	200	−61	0.1	0.2	40	
					• C·T·F	100	600	85	25	300	—	250	−38	0.15	7m	20t	
										600	—	200	−44	0.12	0.2	56	
					• C·M	100	400	45	25	300	—	250	−148	0.11	4m	8.5t	
						Tripler to 462 Mc →											
12.6	0.625	Same as 6524 except for heater rating.															6850
12.6	0.625	3 13/16	1 21/32	Same as 6146 except for heater rating.													6883
12.6	0.4	Same as 2E26 except for heater rating.															6893
12 to 15	0.275 @ 13.5 volts	2 5/8	0.875	11500	C·T·F	40	300	—	5	300	0	175	−12	0.026	0.015	4	7054
					C·M	40	300	—	5	300	0	175	−25	0.02	0.013	2.5	
						Doubler to 40 Mc →											
12 to 15	0.28 @ 13.5 volts	2 3/16	0.875	7000	C·T·F	40	300	—	2.75	300	0	125	−11	0.02	0.025	3.5	7060
6.3	1.25	3 13/16	1 21/32	7000 4.5gg	• AB2	—	750	90	25	750	—	165	−46	0.24z	0.4	131	7212
					• C·P	60	600	67.5	16.7	600	—	150	−87	0.112	0.4	52	
					• C·T·F	60	750	90	25	750	—	160	−62	0.12	0.2	70	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

* For explanatory notes on Class of Service, see page 2.

† Unless otherwise specified, all values shown are for Continuous Commercial Service.

• Intermittent Commercial and Amateur Service.

m Driver power output.

p Useful power output.

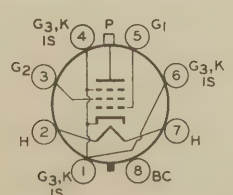
t Useful power output at 462 Mc under indicated conditions.

z Maximum-signal value.

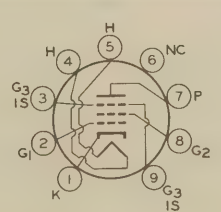
gg Mu-factor, grid No. 2 to grid No. 1.

mm Obtained from plate-supply voltage of 300 volts through a series resistor of 12500 ohms.

For Key to Base and Envelope Connection Diagrams, see page 2



6883 6893 7212



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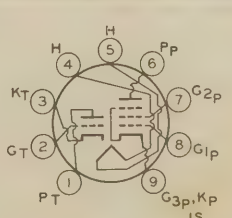

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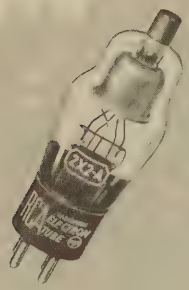
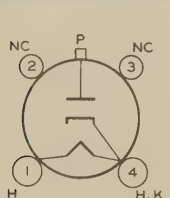


RCA Type	Description[nn]
VACUUM TYPES	
2X2-A	Heater-cathode type. Small 4-pin base. Small cap.
5R4-GY	Full-wave coated-filament type. Octal 5-pin, micanol base.
579-B	Thoriated-tungsten filament. Super-jumbo 4-pin base. Wire top-terminal.
836	Heater-cathode type. Small 4-pin, bayonet base. Medium cap.
878	Not recommended for new equipment design.
1616	Coated-filament type. Small 4-pin, bayonet base. Medium cap.
5825	Thoriated-tungsten-filament type. Small 4-pin base. Medium cap.
8013-A	Thoriated-tungsten-filament type. Small 4-pin base. Skirted medium cap.
8020	Thoriated-tungsten-filament type. Small 4-pin, bayonet base.

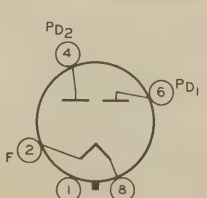
RCA Type	Description[tt]
MERCURY-VAPOR TYPES	
83	Full-wave type. Small 4-pin base.
575-A	Half-wave type. Jumbo 4-pin, bayonet base. Medium cap.
673	Same as 575-A except has super-jumbo 4-pin, bayonet base.
816	Half-wave type. Small 4-pin base. Small cap.
857-B	Half-wave type. Special terminal connections. Skirted large cap.

[nn] Unless otherwise stated, these types are half-wave rectifiers.
[tt] These types have coated filaments, except the 5558 and 5561, which are heater-cathode types.

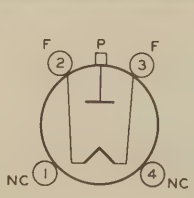
For Key to Base and Envelope Connection Diagrams, see page 2



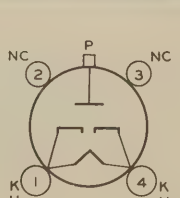
2X2-A



5R4-GY



579-B



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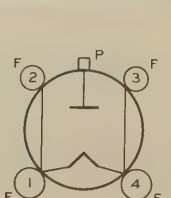

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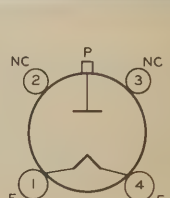


1616 8013-A 8020

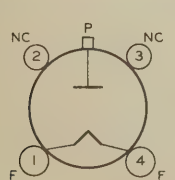
Applications	Cathode		Max. Dimensions Inches		Max. Plate or Anode Ratings			RCA Type
	Volts	Amp.	Length	Diam.	Peak Inverse Volts	Peak Amperes	Average Amperes	
VACUUM TYPES								
For equipment subject to severe shock and vibration.	2.5	1.75	$4\frac{17}{32}$	$1\frac{9}{16}$	12500[s]	0.06[s]	0.0075[s x]	**2X2-A**
For low-power transmitters and industrial uses.	5	2	$5\frac{5}{16}$	$2\frac{1}{16}$	2800[s]	0.65[s x]	0.175[s u]	**5R4-GY**
For high-voltage low-current uses.	2.5	6	$7\frac{7}{16}$	$2\frac{1}{16}$	20000	0.27	0.025	**579-B**
For use in transmitting and industrial equipment.	2.5	5	$6\frac{9}{16}$	$2\frac{7}{16}$	5000	1	0.25	**836**
For replacement use.	2.5	5	$7\frac{5}{8}$	$1\frac{13}{16}$	20000	0.02	0.005	**878**
For use in transmitting and industrial equipment.	2.5	5	$6\frac{13}{16}$	$2\frac{1}{16}$	6000	0.8	0.13	**1616**
For rf-operated high-voltage low-current power supplies.	1.6	1.25	$5\frac{27}{32}$	$2\frac{1}{16}$	60000	0.04	0.002	**5825**
For high-voltage low-current uses.	2.5	5	$6\frac{1}{16}$	$2\frac{1}{16}$	40000[pp]	0.15	0.02	**8013-A**
For high-voltage low-current uses.	5	6	8	$2\frac{5}{16}$	40000	0.75	0.1	**8020**

Cathode		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings—For Supply Frequency of 60 cps					Operating Conditions (Single-Phase Full-Wave 2 Tubes)[uu]				RCA Type
Volts	Amp.	Length	Diam.		Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes	
Values shown in italics are for quadrature operation; other values are for in-phase operation.													**MERCURY-VAPOR TYPES**	
5	3	$5\frac{3}{8}$	$2\frac{1}{16}$	15	20 to 60	1550[s]	1[s x]	0.225[s]	—	1550	1100	500	0.225[v]	**83**
5	10	$11\frac{1}{8}$	$3\frac{1}{8}$	10	20 to 50	15000	6	1.5	100	15000	10600	4800	3	**575-A**
					20 to 60	10000	7	1.75	100	10000	7000	3200	3.5	
					20 to 50	*15000*	*10*	*2.5*	*100*	*15000*	*10600*	*4800*	*5*	
					20 to 60	*10000*	*10*	*2.5*	*100*	—	—	—	—	
5	10	$11\frac{7}{16}$	$3\frac{1}{8}$		For maximum ratings and operating conditions, refer to Type 575-A.									**673**
2.5	2	$4\frac{11}{16}$	$1\frac{9}{16}$	15	20 to 60	7500	0.5	0.125	5	7500	5200	2400	0.25	**816**
5	30	$19\frac{7}{8}$[c]	$7\frac{1}{8}$	15	30 to 40	22000	40	10	400	22000	15400	7000	20	**857-B**
					25 to 60	10000	40	10	400	10000	7000	3200	20	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[c] Excluding flexible leads.
[s] Design-center values.
[u] With choke input to filter.
[v] Per tube.
[x] Per plate.
[pp] For oil-immersed operation, a maximum rating of 55,000 volts applies.
[uu] Conditions assumed: (1) sine-wave supply (2) zero voltage drop (3) pure resistance load (4) no filter.

For Key to Base and Envelope Connection Diagrams, see page 2.



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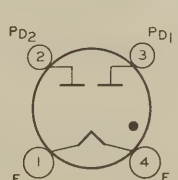

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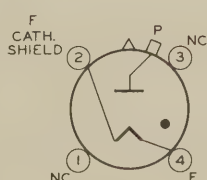

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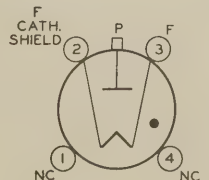

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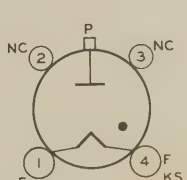

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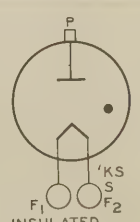
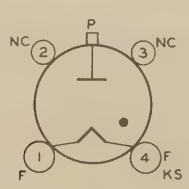


857-B

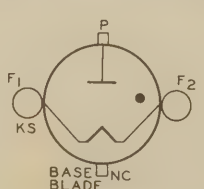
RCA Type	Description[tt]
MERCURY-VAPOR TYPES—Cont'd	
866-A	Half-wave type. Small 4-pin, bayonet base. Ceramic-insulated medium cap.
869-B	Half-wave type. Special end-mountings. Skirted large cap.
872-A	Half-wave type. Jumbo 4-pin base. Ceramic-insulated medium cap.
5558	Half-wave type. Small 4-pin, bayonet base. Medium cap.
5561	Half-wave type. Rated for welder-control service with a maximum averaging time of 15 seconds. Super-jumbo 4-pin, bayonet base.
6894	Half-wave type. Skirted medium-metal-shell jumbo 4-pin bayonet base. Medium cap.
6895	Same as 6894 except has large-metal-shell super-jumbo 4-pin bayonet base.
8008	Same as 872-A except has super-jumbo 4-pin base.
GAS TYPES	
3B25	Half-wave xenon type. Small 4-pin, bayonet base. Medium cap.
3B28	Half-wave xenon type. Small 4-pin, bayonet base. Medium cap.

[tt] These types have coated filaments, except the 5558 and 5561, which are heater-cathode types.

For Key to Base and Envelope Connection Diagrams, see page 2.



866-A



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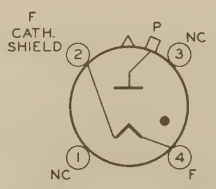
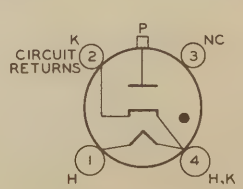


872-A 6894



5558

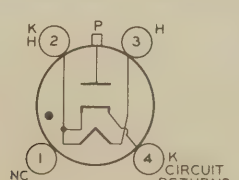
Cathode		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings—For Supply Frequency of 60 cps					Operating Conditions (Single-Phase Full-Wave 2 Tubes)[uu]				RCA Type
Volts	Amp.	Length	Diam.		Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes	
MERCURY-VAPOR TYPES—Cont'd														
2.5	5	6 9/16	2 7/16	15	20 to 60	10000	1	0.25	20	10000	7000	3200	0.5	**866-A**
					20 to 70	5000	1	0.25	20	5000	3400	1600	0.5	
					20 to 80	2500	2	0.5	20	2500	1600	800	1	
5	19	14 7/16	5 1/8	15	30 to 40	20000	10	2.5	100	20000	14000	6300	5	**869-B**
					30 to 50	15000	10	2.5	100	15000	10600	4700	5	
					30 to 60	10000	10	2.5	100	10000	7000	3100	5	
					30 to 40	*20000*	*10*	*2.5*	*100*	—	—	—	—	
					30 to 50	*15000*	*20*	*5*	*100*	—	—	—	—	
					30 to 60	*10000*	*20*	*5*	*100*	—	—	—	—	
5	7.5	8 1/2	2 5/16	10	20 to 60	10000	5	1.25	50	10000	7000	3200	2.5	**872-A**
					20 to 70	5000	5	1.25	50	5000	3400	1600	2.5	
5	4.5	7	3	15	30 to 60	5000	15	2.5	200	5000	3400	1600	5	**5558**
					30 to 80	2000	15	2.5	200	2000	1400	600	5	
5	10	11 1/4	3 13/16	15	40 to 80	3000	40	6.4	400	3000	2000	950	12.8	**5561**
Welder-Control Service →				15	25 to 50	10000	16	4	160	—	—	—	—	
5	10	10 17/32	2 5/8	10	20 to 50	20000	8.3	1.8	100	20000	14000	6300	3.6	**6894**
					20 to 55	15000	8.3	1.8	100	15000	10600	4700	3.6	
					20 to 60	10000	8.3	1.8	100	10000	7000	3200	3.6	
					20 to 50	*20000*	*11.5*	*2.5*	*100*	—	—	—	—	
					20 to 55	*15000*	*11.5*	*2.5*	*100*	—	—	—	—	
					20 to 60	*10000*	*11.5*	*2.5*	*100*	—	—	—	—	
5	10	10 13/32	2 5/8	For maximum ratings and operating conditions, refer to Type 6894.										**6895**
5	7.5	8 3/4	2 5/16	For maximum ratings and operating conditions, refer to type 872-A.										**8008**
GAS TYPES														
2.5	5	6 5/16	2 1/16	10	−75 to +90[v]	4500	2	0.5	20	4500	3000	1400	1	**3B25**
2.5	5	6 5/32	2 1/16	10	−75 to +90[v]	10000	1	0.25	20	10000	7000	3200	0.5	**3B28**
						5000	2	0.5	20	5000	3400	1600	1	

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[v] Ambient temperature.

[uu] Conditions assumed: (1) sine-wave supply (2) zero voltage drop (3) pure resistance load (4) no filter.

For Key to Base and Envelope Connection Diagrams, see page 2.



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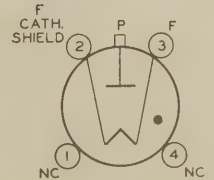

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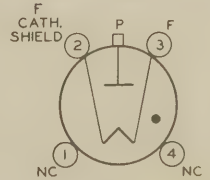
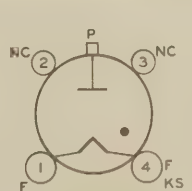


8008

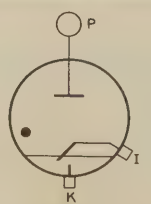


3B25 3B28

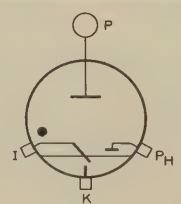
Type	Description	Max. Dimensions Inches		Class of Service
		Rigid Length	Diam.	
5550	Compact, steel-jacketed type used with removable clamp for water-cooled operation. Two tubes in inverse-parallel connection will control 300 kva on a demand basis at voltages from 250 to 600 volts at frequencies from 25 to 60 cps.	10	$2\frac{3}{4}$	Resistance Welding-Control[qq]
5551-A	Steel-jacketed type recommended for welding-control service but also useful for intermittent rectifier service. Supersedes and replaces type 5551. Has bracket for mounting thermostat. In resistance-welding control service, two tubes in inverse-parallel connection will control 600 kva at voltages of 250 to 600 volts at frequencies from 25 to 60 cps.	$13\frac{1}{2}$	$2\frac{7}{8}$[a]	Resistance Welding-Control[qq] Intermittent Rectifier and Frequency-Changer Welding Service
5552-A	Steel-jacketed type recommended for welding-control service but also useful for intermittent rectifier-service. Supersedes and replaces type 5552. Has bracket for mounting thermostat. In resistance-welding control service, two tubes in inverse-parallel connection will control 1200 kva on a demand basis from 250 to 600 volts at frequencies from 25 to 60 cps.	$15\frac{1}{4}$	$3\frac{5}{8}$[a]	Resistance Welding Control[qq] Intermittent Rectifier Service
5553-B	Steel-jacketed type recommended for welding-control service but also useful for intermittent rectifier service. Supersedes and replaces types 5553 and 5553-A. Has bracket for mounting thermostat. Two tubes in inverse-parallel connection will control 2400 kva at voltages of 250 to 600 volts at frequencies from 25 to 60 cps.	20	$4\frac{11}{16}$[a]	Resistance Welding Control[qq] Frequency-Changer Welding Service
5555	Steel-jacketed type for rectifier service in the 125, 250, 600, and 900-volts dc-power field. In rectifier service, six tubes will rectify 600 kw at 300 volts dc and 500 kw at 600 and 900 volts dc. The 5555 may also be used for resistance-welding control at 2400 volts rms.	$18\frac{1}{2}$	$4\frac{9}{16}$[a]	Rectifier Resistance Welding Control[qq]
5822-A	Steel-jacketed type designed for frequency-changer welding service. Supersedes and replaces type 5822. Has bracket for mounting thermostat.	$15\frac{1}{4}$	$3\frac{5}{8}$[a]	Intermittent Rectifier and Frequency-Changer Welding Service

[a] Maximum radius. [qq] For two tubes in inverse-parallel circuit.

For Key to Base and Envelope Connection Diagrams, see page 2



5550 5551-A
5552-A 5553-B 5822-A



5555

RMS Supply Volts	Supply Frequency Range cps	Maximum Anode Ratings								Maximum Ignitor Ratings					Minimum Ignition Requirements			RCA Type
		Kva Demand	Peak Inverse or Forward Volts	Fault Amperes[ss]	Averaging Time Seconds	Peak Amperes: Welder Service	Peak Amperes: Rectifier Service	Average Amperes: Welder Service	Average Amperes: Rectifier Service	Peak Voltage: Neg.	Peak Voltage: Pos.	Current Amperes: Peak	Current Amperes: Ave.[xx]	Current Amperes: RMS	Peak Voltage	Peak Current Amperes	Starting Time μsec.[vv]	
250 600	25 to 60	150[w] 150[w]	— —	1680 700	27.8 11.6	840 350	— —	4.86 4.86	— —	5	900	100	1	10	200	30	100	**5550**
250 600		300[ll] 300[ll]	— —	3360 1400	22 9.2	1680 700	— —	12.1 12.1	— —									
250 600	25 to 60	200 200	— —	6720 2800	18 7.5	1130 466	— —	56 56	— —	5	Equal to anode volts	100	1	10	200	30	100	**5551-A**
250 600		600 600	— —	6720 2800	18 7.5	3400 1410	— —	30.2 30.2	— —									
— — —	50 to 60	— — —	500 1200 1500	8750 7500 6000	6 10 10	— — —	700 600 480	— — —	40 22.5 18									
250 600	25 to 60	400 400	— —	13450 5600	14 5.8	2260 945	— —	140 140	— —	5	Equal to anode volts	100	1	10	200	30	100	**5552-A**
250 600		1200 1200	— —	13450 5600	14 5.8	6800 2830	— —	75.6 75.6	— —									
—		—	500	6000	6	—	1600	—	100									
250 600	25 to 60	800 800	— —	27000 11200	11 4.6	4530 1890	— —	355 355	— —	5	Equal to anode volts	100	1	10	200	30	100	**5553-B**
250 600		2400 2400	— —	27000 11200	11 4.6	13600 5660	— —	192 192	— —									
— — —	50 to 60	— — —	600 1200 1500	50000 37500 30000	6.25 6.25 6.25	— — —	4000 3000 2400	— —	190 140 112									
— —	25 to 60	— —	900 2100	12000 9000	— —	— —	1800 1200	— —	200 150	5	2400	100	2[yy]	15	150	40	100	**5555**
2400 2400		1105 2400	— —	6000 6000	0.5 1.66	3000 3000	— —	207 135	— —	*Auxiliary anode:* Peak Forward Volts = 150 max.; Peak Inverse Volts, main anode not conducting = 150 max.; main anode conducting = 25 max.; Max. Amperes over any interval of 10 sec. max. = 20 peak, 5 ave, 10 rms.								
— —	50 to 60	— —	1200 1200	18750 18750	6.25 6.25	1500 420	— —	20 70	— —	5	Equal to anode volts	100	10	1	200	30	100	**5822-A**
— —		— —	1500 1500	15000 15000	6.25 6.25	1200 336	— —	16 56	— —									

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[w] With clamp temperature between 10° C and 75° C.

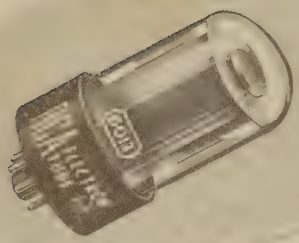
[ll] With clamp temperature between 10° C and 50° C.

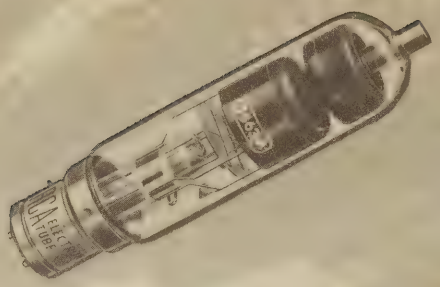
[ss] For duration of 0.15 sec. max. The fault current value is not an operating rating. It is given to assist equipment designers in choice of circuit components such that the tube will not be subjected to disastrous currents under abnormal service conditions approximating a short circuit.

[vv] At specified peak-voltage or peak-current value.

[xx] Over any interval of 5 seconds max.

[yy] Over any interval of 10 seconds max.



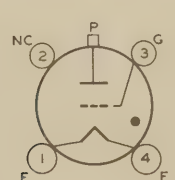


Type	Description	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings					
							Temperature Range					
		Volts	Amp.	Length	Diam.		Condensed Mercury °C or Ambient °C[zz]	Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Anode Amperes	Average Anode Amperes	Fault Amperes
TRIODES (Mercury-Vapor Types)—For Control Service (except as noted)												
3C23	Gas and mercury-vapor tube of the negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5	7	6 1/8	2 1/16	15	*−40 to +80* *−40 to +100*	1250 200	1250 200	6 6	1.5 1.5	120 120
627	Negative-control, filament type. Super jumbo 4-pin base, medium cap.	2.5	6	7	2 1/16	12	25 to 70	1250	2500	2.5	0.64	25
676	Negative-control, heater-cathode type. Super-jumbo 4-pin base, medium cap.	5	10	11 3/4	3 13/16	12	40 to 80	2500	2500	40	6.4	200
				Welder-Control Ratings			40 to 90	750	750	77	2.5	200
677	Negative-control, heater-cathode type. Super jumbo 4-pin base, medium cap.	5	10	11 3/4	3 13/16	12	30 to 50	10000	10000	16	4	16
5557	Negative-control, filament type. Small 4-pin bayonet base, medium cap.	2.5	5	6 1/8	2 1/16	16	40 to 60 40 to 80 40 to 90	5000 2500 1250	10000 5000 1250	1 2 3	.25 0.5 1	40 40 40
5559	Negative-control, heater-cathode type. Small 4-pin bayonet base, medium cap.	5	4.5	7 1/4	3	16	40 to 80	1000	1000	15	2.5	200
5563-A	Negative-control, filament type. Values in italics are for quadrature operation. Jumbo 4-pin, bayonet base. Medium cap.	5	10	10 17/32	2 5/8	15	25 to 50 25 to 55 *25 to 50* *25 to 55*	20000 15000 *20000* *15000*	20000 15000 *20000* *15000*	6.4 10 *11.5* *11.5*	1.6 1.8 *2.5* *2.5*	70 70 *70* *70*
TRIODES (Gas Types)—For Control Service (except as noted)												
629	Not recommended for new equipment design.	2.5	2.6	4 1/4	1 9/16	15	*−40 to +70*	350	350	0.2	0.04	2
884	Negative-control, heater-cathode type. Small 5-pin base.	6.3	0.6	4 1/8	1 9/16	14	*−75 to +90*	350	—	0.3	0.075	—
				Max. Ratings for Relaxation Oscillator Service			Peak Anode Volts, 300 Peak Anode Amp., 0.3					

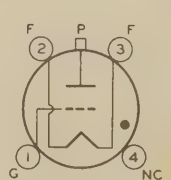
To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[zz] Values shown in italics are ambient temperatures. All ratings are for continuous service unless otherwise specified.

For Key to Base and Envelope Connection Diagrams, see page 2.



3C23 5557



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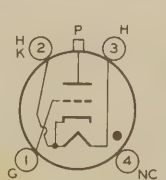

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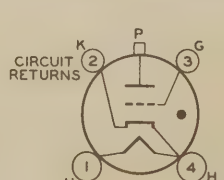
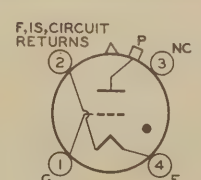
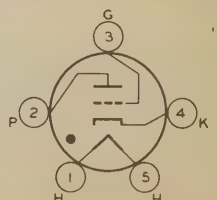


5559 6130/3C45



5563-A



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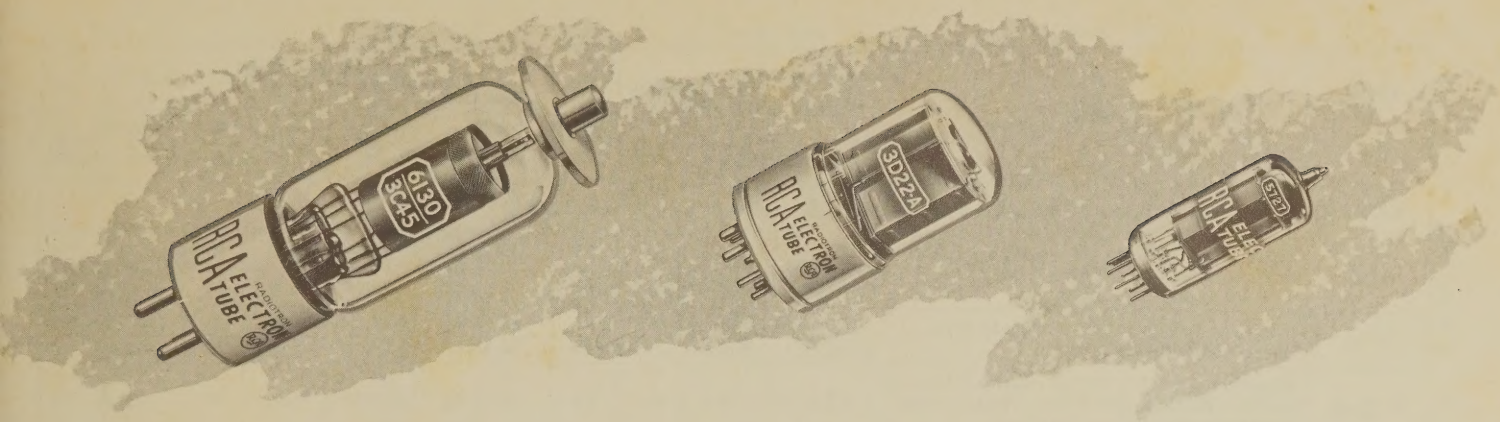


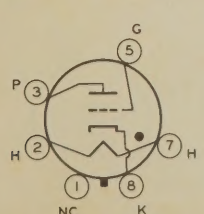
RCA Type	Description	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings					
							Temperature Range	Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Anode Amperes	Average Anode Amperes	Fault Amperes
		Volts	Amp.	Length	Diam.		Condensed Mercury °C or Ambient °C[zz]					
TRIODES (Gas Types)—For Control Service (except as noted)—Cont'd												
885	Not recommended for new equipment design.	2.5	1.5	4 3/16	1 9/16	14	For ratings, refer to Type 884.					
6130/ 3C45	Positive-control, heater-cathode, hydrogen type. Full ratings to 50,000 feet. Pulse modulator. Small 4-pin base, small cap.	6.3	2.3	5 3/16	1 9/16	150	*−50 to +90*	3000	3000	35	0.045	—
							Min. DC Anode-Supply Volts, 800 Max. Pulse Duration, 6 μsec.					
7086	Negative-control, filament, xenon type. Special terminal connections.	2.5	92	11.8	4.62	10	*−55 to +75*	650	650	160	40	4000
		Max. Ratings for Intermittent Service:					*−55 to +75*	650	650	400	7	4000
C1K/ 6014	Negative-control, filament, xenon type. Small 4-pin, bayonet base.	2.5	6.3	4 1/4	1 9/16	8	*−55 to +75*	1000	1250	8	1	77
C3J/ 5632	Negative-control, filament, xenon type. Small 4-pin, bayonet base. Medium cap.	2.5	9	6	1 9/16	10	*−55 to +75*	900	1250	30	2.5	300
C3J-A/ 5684	Negative-control, filament, xenon type. Small 4-pin, bayonet base. Medium cap.	2.5	9	6	1 9/16	10	*−55 to +75*	1000	1250	30	2.5	300
C6J/ 5C21	Negative-control, filament, xenon type. Super-jumbo 4-pin base. Medium cap.	2.5	21	9 1/2	2 1/32	9	*−55 to +75*	750	1250	77	6.4	770
C6J-A/ 5685	Negative-control, filament, xenon type. Super-jumbo 4-pin base. Medium cap.	2.5	21	9 1/2	2 1/32	9	*−55 to +75*	1000	1250	77	6.4	770
C16J/ 5665	Negative-control, filament, xenon type. Base bracket and flexible leads.	2.5	31	10 1/2[c]	2 11/16	11	*−55 to +75*	1000	1250	160	16	1000
								1000	1250	100	18	1000

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[c] Excluding flexible leads.

[zz] Values shown in italics are ambient temperatures. All ratings are for continuous service unless otherwise specified.

For Key to Base and Envelope Connection Diagrams, see page 2.



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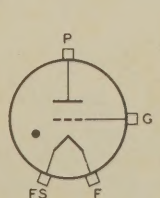

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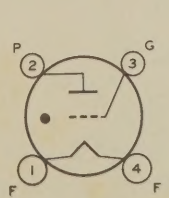

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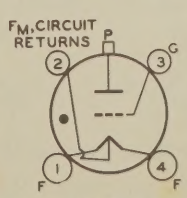

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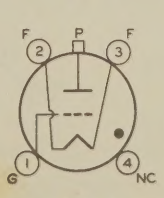

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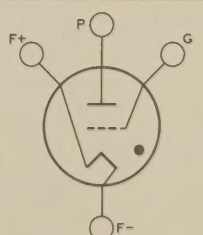


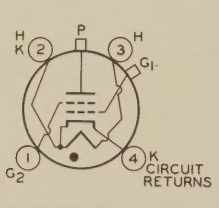
C16J/5665

Type	Description	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings					
							Temperature Range	Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Anode Amperes	Average Anode Amperes	Fault Amperes
		Volts	Amp.	Length	Diam.		Condensed Mercury °C or Ambient °C[zz]					
TETRODES (Mercury-Vapor Types)—For Control Service (except as noted)												
105	Negative-control, heater-cathode type. Super-jumbo 4-pin, bayonet base. Two large caps.	5	10	11¼	2½[a]	16	40 to 80	2500	2500	40	6.4	400
		Max. Ratings for Intermittent Service:					25 to 50	10000	10000	16	4	160
172	Negative-control, heater-cathode type. Special terminal connections	5	10	10 27/32	2⅝[a]	16	40 to 80	2000	2000	40	6.4	400
		5.5	11	Welder-Control Ratings			30 to 95	750	750	77	2.5	400
632-B	Negative - control, heater - cathode type. Ignitor firing applications. Small 4-pin bayonet base, two medium caps.	5	5	8 5/16	1¾[a]	12	40 to 80	1500	1500	30	2.5	150
672-A	Negative - control, heater - cathode type. Ignitor firing applications. Super-jumbo 4-pin bayonet base, medium cap.	5	5	8⅛	2 5/16	12	40 to 80	2500	2500	40	3.2	150
5560	Negative - control, heater - cathode type. Ignitor firing applications. Small 4-pin bayonet base, two medium caps.	5	4.5	7 15/16	2¼[a]	16	40 to 80	1000	1000	15	2.5	200
TETRODES (Gas Types)—For High-Sensitivity Control Service												
2D21	Negative-control, heater-cathode type. Miniature 7-pin base.	6.3	0.6	2⅛	¾	8	*−75 to +90*	650	1300	0.5	0.1	10
		Typical Operating Conditions for Relay Service: Anode Voltage = 400 rms volts; Grid-No. 2 Voltage = 0; Grid-No. 1 Voltage = −6 volts; Grid-No. 1 Circuit Resistance = 1 meg.; Anode Circuit Resistance = 2000 ohms.										
3D22-A	Negative-control, heater-cathode type. Giant 7-pin, bayonet base.	6.3	2.6	4⅝	2⅜	10	*−75 to +90*	650	1500	8	0.8	30
							Grid-No. 1 Circuit Resistance, 2 megohms max.					
502-A	Negative-control, heater-cathode type. Octal, 8-pin base.	6.3	0.6	2⅝	1 5/16	8	*−55 to +90*	650	1300	1	0.1	10
2050	Negative-control, heater-cathode type. Octal, 8-pin base.	6.3	0.6	4⅛	1 9/16	8	*−75 to +90*	650	1300	1	0.1	10
							Grid-No. 1 Circuit Resistance, 10 megohms max.					
5696	Negative - control, heater - cathode type. Low heater-current drain and short deionization time. Miniature 7-pin base.	6.3	0.15	1¾	¾	10	*−55 to +90*	500	500	0.1	0.025	2
		Typical Operating Conditions for Relay Service: Anode Voltage = 117 rms volts; Grid-No. 1 Peak Signal Volts = 5; Grid-No. 1 Bias Volts (rms) = 5; Grid-No. 1 Circuit Resistance = 0.1 meg.										
5727	"Premium", negative-control heater-cathode type designed to withstand shock and vibration. Miniature 7-pin base.	6.3	0.6	2⅛	¾	8	*−75 to +150*	650	1300	0.5	0.1	10
		Max. Ratings for Pulse-Modulator Service:						500	100	10	0.01	100
6012	Negative-control, heater-cathode type. Octal, 6-pin base.	6.3	2.6	3⅞	1⅝	10	*−75 to +90*	650	1300	5	0.5	20

To facilitate comparison between types, all ratings are given on an absolute-maximum basis.

[a] Maximum radius. [zz] Values shown in italics are ambient temperatures. All ratings are for continuous service unless otherwise specified.

For Key to Base and Envelope Connection Diagrams, see page 2.



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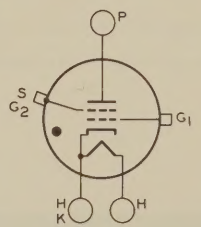

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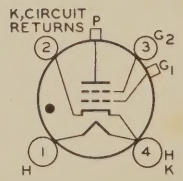

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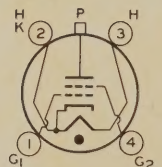

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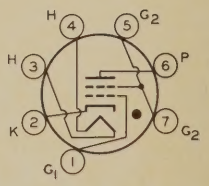

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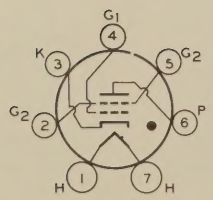

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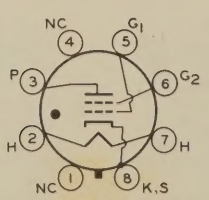

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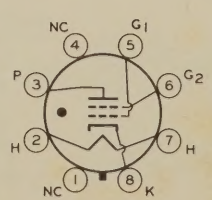

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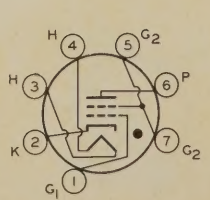

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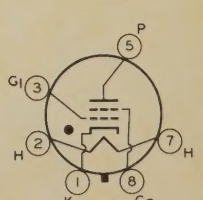

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